

Mining Engineering

Outline of the history of Soviet mining engineering. Reviewed by S. Ya. Rackovskiy, S.M.
Yasiukevich, G.N. Popov. Gor. zhur. No. 2, 1952

Monthly List of Russian Accessions, Library of Congress, April, 1952 Unclassified

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

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CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A. A.

Reconstruction of the coal mining industry. Moskva, Gos. nauch.-tekhn.
gorno-geologo-neftianoe izd-vo, 1934. 236 p. (50-45462)

TN808.R9Z9

ZVORYKIN, A. A.

APPROVED FOR RELEASE: Thursday, September 19, 2013
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ZVORYKIN "APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
Zvorykin, A. A. and Kirzhner, D. M. "The development of the mining industry of the USSR
and the productivity of its labor", in the collection entitled: Voprosy gornogo dela,
Moscow, 1948, p. 369-85.

SO: U-2888, 12 Feb. 53, (Letopis' Zhurnal 'nykh Statey, No. 2, 1949).

ZVORYKIN, A. A., PROF

USSR/Mining Methods
Efficiency, Industrial

Nov 48

"Methods for Increasing the Productivity of Labor
at USSR Coal Industries," Prof A. A. Zvorykin,
Dr, 3½ pp

"Ugol'" No 11 (272)

Discusses causes of stoppages and delays at coal
face. Explains advantages of mechanization.
Quotes figures illustrating percentage of improve-
ment.

14/49r100

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

ZVORYKIN, APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7 Soviet superiority in the most important technical discoveries and inventions.

Soviet superiority in the most important technical discoveries and inventions.
Moskva. Pravda. 1949. 31 p.

ZVORYKIN, A.

20732. Zvorykin, A. K istorii kizelovskogo kamennougol'nogo basseyna. Voprosy ekonomiki,
1949, No. 5, s. 36-47

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

ZVORYKIN, A

Pervootkryvateli Kamennougol'nykh Passeynov SSSR. (First Discoverers of USSR's
Coal Fields) ... Moskva
(12D-V0 "Pravda") 1950.

31 P.
At head of title: Vsesyuznoye Obshchestvo Po Rasprostraneniyu Politicheskikh
I Nauchnykh Znaniy.
Bibliographical footnotes.

A lecture on discoveries of coal deposits in Russia, listing dates and locations,
as well as names of discoverers. Mentioned is also the beginning of a broad
development of underground coal gasification in the Soviet Union.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.A.; KIRZNER, D.M.; KUNDIN, M.B.

[Economics, organization and planning in the U.S.S.R. coal industry]
Ekonomika, organizatsiya i planirovaniye ugol'noi promyshlennosti SSSR
Moskva, Ugletekhizdat, 1951. 687 p.
(Mining industry and finance) (Coal mines and mining)
(MLRA 6:8)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
ZVORYKIN APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

The discovery of coal deposits in Russia; the beginning of their development.
Research and documents. Moscow, Ugletekhizdat, 1952. 355 pl maps.
(54-22422)

TN808.R9Z89

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
ZVORYKIN, A.A.; KIRZHEV, D.M.; KUNDIN, M.B.; DOROKHIN, N.G., otvetstvennyy
redaktor; FEYTEL'MAN, N.G., redaktor; CHERENKOV, N.V., redaktor;
ANDREYEV, G.G., tekhnicheskiy redaktor

[Economics of the coal industry of the U.S.S.R.] Ekonomika ugol'noi
promyshlennosti SSSR. Izd. 2-e, perer. i dop. Moskva, Ugletekhizdat,
1954. 427 p. [Microfilm] (MLRA 8:2)
(Coal mines and mining)

ZVORYKIN, Anatoliy Alekseyevich; KIRZHNER, David Mironovich; KUDIN, Mikhail
Borisovich; DOHOKHIN, N.O., otvetstvennyy redaktor; BYTEL'MAN, N.G.,
redaktor izdatel'stva; KOROVENKOVA, Z.A., tekhnicheskii redaktor;
ALADOVA, Ye.I., tekhnicheskii redaktor

[Production organization and planning in the Soviet coal industry]
Organizatsiya i planirovaniye proizvodstva v ugol'noi promyshlennosti
SSSR. Izd. 2-oe, perer. i dop. Moskva, Ugletekhnikdat, 1956. 483 p.
(Coal mines and mining) (MLRA 9:12)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
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CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

BERKOVICH, D.M.; ZVOHYKIN, A.A.

Some tendencies in the development of the technology of
modern machine construction. Vop. ist.est. i tekhn. no.1:
168-178 '56. (MILRA 9:10)

(Machinery industry)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.; KIRZHNER, D.

Same problems in the organization of wages in the coal industry.
Sets. trud no.2:67-75 F '56. (MLRA 9:?)
(Coal mines and mining) (Wages)

ZVON

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CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

BERKOVICH, D.M.; ZVON

Trends in the technological development of the contemporary machine
construction industry. Vop. ist. est. i tekhn. no.2:207-216 '56.
(MIRA 10:1)

(Mechanical engineering) (Machinery--Construction)

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CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.A.

Periodicity in the history of natural sciences and technology.
Vop. 1st. est. i tekhn. no. 4:153-162 '57. (MIRA 11:1)
(Technology--History) (Natural history) (Dialectical materialism)

2 Veeved, D. M. 119-11-4/7

AUTHORS

Zvorykin, A.A., and Kirzhner, D.M.

TITLE

"How to Determine the Economic Effectiveness of Automation".
(kak opredelyat' ekonomicheskuyu effektivnost'
avtomatizatsii)

PERIODICAL

Priborostroyeniye, 1957
Nr 11, pp. 13-17 (USSR)

ABSTRACT

The most important index of the economic effectiveness of automation is the degree of the increase of work productivity. This effectiveness in the field of work productivity depends on the degree of wage-intensity in an enterprise being automated.

For the determination of the economic effectiveness in the index of work productivity we can carry out the following simple calculations: We call the number of workers in the enterprise

- a) before the introduction of automation in the enterprise h_1 ,
- b) after the introduction of automation h_2 , and we obtain in this case-with all other conditions remaining the same-the increase of work productivity to

CARD 1/4

$$\frac{h_1 - h_2}{h_2} \times 100 \%$$

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"How to Determine the Economic Effectiveness of Automation".

and a decrease of wage intensity to

$$\frac{h_1 - h_2}{h_1} \times 100 \%$$

As second index for the determination of the effectiveness of automation serves the specific use of capital per production unit. When analysing the amount of this expenditure a certain regularity can be observed. As a rule the capital use per production unit decreases there where it is relatively low, or, where, in consequence of automation the scope of production increases essentially. The more complicated the enterprise is in technical respect and the higher the level of automation and the smaller the increase of production is, the more the capital use per production unit of the annual production will drop.

With the level of capital use also the socalled efficiency-agent of automation is connected, which shows us how much smaller the capital use is for the automation to secure an increase of the capacity of an aggregate or of machine, than the expenditures which

CARD 2/4

119-11-4/7

"How to Determine the Economic Effectiveness of Automation".

are necessary in order to reach such an increase of the capacity of an aggregate or a machine without using automatic devices. There is no reason to regard the coefficient of the efficiency of automation of universal importance. The most important index of the economic efficiency of automation in the USSR is the reduction of the production costs. Usually this effectiveness is characterized by a comparison of the percentage of the reduction of production costs in a non-automated enterprise. This is right, if the economic effectiveness of the same kind of processes and enterprises is considered. The percentage of the reduction of production costs with automation is different if the production costs are calculated with or without the costs of the raw-material. The distribution of the expenditures of the individual departments to the individual products is usually carried out proportionally to the wage of the basic productive workers. In cases of the automation of single processes or departments with a number of industrial branches the same principle was maintained.

CARD 3/4

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"How to Determine the Economic Effectiveness of Automation".

which is used when comparing an automated with a non-automated production. This, however, is obviously incorrect as the real expenditures of departments do not change according to the same relation with automation as do the wages.

When determining the share of the general costs of production per production unit in a non-automated or automated enterprise it is important to regard the demands for the equalization of the quantity of production. Without this the effectiveness of an automated enterprise is artificially increased as in such a case the general costs of production (of the non-automated enterprise) refer to a smaller quantity of production than in an automated enterprise.

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"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
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ZVORYKIN, A.A., prof.; KIRZHNER, D.M.

Progressive engineers and technicians of the U.S.S.R. coal industry.
Ugol' 32 no.11:48-53 N '57. (MIRA 10:12)
(Coal miners) (Coal research)

28(1)

PHASE I BOOK EXPLOITATION SOV/1737

Zvorykin, Anatoliy Alekseyevich, Doctor of Economic Sciences,
Professor

Avtomatizatsiya proizvodstva i yeye ekonomicheskaya effektivnost'
(Automation of Production and Its Economic Efficiency) Moscow,
Izd-vo "Znaniye," 1958. 62 p. (Series: Vsesoyuznoye
obshchestvo po rasprostraneniyu politicheskikh i nauchnykh
znanii. Seriya 3, 1958, nos. 9/10) 66,000 copies printed.

Scientific Ed.: B.S. Sotskov, Doctor of Technical Sciences;
Ed.: T.F. Falaleyeva; Tech Ed.: A.V. Trofimov.

PURPOSE: This pamphlet was prepared by the All-Union Society
for the Dissemination of Political and Scientific Information
and is intended for the general reader interested in auto-
mation.

Card 1/3

Automatization of Production (Cont.)

SOV/1737

COVERAGE: The author of this pamphlet briefly describes the various points of view of foreign specialists on automation. He presents his own views and concepts and reviews the automatization of production processes in the USSR and abroad. Emphasis is placed on the economic aspects of the automatization of production processes. No personalities are mentioned. There are no references.

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Reason for Automatizing Production	5
Development of Automatization of Production Processes in the USSR and Capitalist Countries	14
Economic Efficiency of Automatization of Production Processes	30
Equalization of production volume when comparing automatized and nonautomatized production	34
Change in the productivity of labor under conditions of automatized production	40

Card 2/3

Automatization of Production (Cont.)

SOV/1737

Change in the extent of capital expenditures under conditions of automatized production	43
Change in the cost of product under conditions of automatized production	47
Comparison of automatized and nonautomatized production based on the length of time necessary for the recovery of capital outlays	51
Economic efficiency of automatization in relation to its level and applicability to individual branches of production	56

AVAILABLE: Library of Congress

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Card 3/3

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
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NEMCHENKO, V.S.; BOCHAROV, M.D.; KRISTOSTUR'YAN, N.G.; CHERKASOV, V.I.;
ANDREYANOV, V.V.; KAUFMAN, V.M.; PAKHMANOV, V.F.; ZVORYKIN, A.A.,
otv.red.; ANICHKOV, N.N., red.; BARDIN, I.P., red.; BLAGOVISHCHENOV,
A.A., red.; VVEDENSKIY, B.A., red.; GRIGOR'YEV, A.A., red.;
KAPUSTINSKIY, A.F., red.; KOLMOGOROV, A.N., red.; MIKHAYLOV, A.A.,
red.; OPARIN, A.I., red.; PETROV, F.N., red.; STOLNTOV, V.N., red.;
STRAKHOV, N.M., red.; FIGUROVSKIY, N.A., red.; KOSTI, S.D., tekhn.red.

[Biographical dictionary of leaders in the natural sciences and
technology] Biograficheskii slovar' deiatelei estestvoznanija
i tekhniki. Vol.1. A - L. Otvetstvennyi red. A.A.Zvorykin. Red.
kollegija: N.N.Anichkov i dr. Moskva,.Gos.nauchn.izd-vo "Bol'shaja"
Sovetskaja Entsiklopedija. * 1958. 548 p. (MIRA 12:4)

1. Redaktsiya istorii estestvoznanija i tekhniki Bol'shoy Sovetskoy
Entsiklopedii (for Nemchenko, Bocharov, Kristostur'yan, Cherkasov,
Andreyanov, Kaufman, Pakhmanov).
(Scientists)

ZVORYKIN, A.A.

25-2-1/43

AUTHOR: Zvorykin, A.A., Doctor of Economical Sciences, Professor, and
Shukhardin, S.V., Candidate of Technical Sciences

TITLE: Force of Scientific Foresight (Sila nauchnogo predvideniya).
Karl Marx in Technical Progress (Karl Marks o progresse
tekhniki)

PERIODICAL: Nauka i Zhizn', 1958, # 2, p 1-6 (USSR)

ABSTRACT: A brief review of advances made in the scientific and technical fields during the last few decades. There is one sketch and one diagram.

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Card 1/1

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CIA-RDP86-00513R002065720002-7"

ZVORKIN, A.A., prof.; KIRZHNIK, D.M., prof.

Basic problems of mining engineering theory and practice. Izv.
vys.ucheb.zav.; gor.zhur. no.3:3-11 '58. (MIRA 12:8)
(Mining engineering)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.A., prof.; KIRZHNER, D.M.; prof.

Methods of determining the economic efficiency of automatization
in the coal industry. Nauch.dokl.vys.shkoly; gor.delo. no.4:
259-266 '58. (MIRA 12:1)

1. Predstavleno kafedroy ekonomiki, organizatsii i planirovaniya
gornykh predpriyatiy Moskovskogo gornogo instituta imeni I.V.
Stalina.

(Coal mines and mining--Costs)
(Automatic control)

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CIA-RDP86-00513R002065720002-7"

ZVORYKIN, Anatoliy Alekseyevich; ZHUK, I., red.; ULANOVA, L.,
tekhn.red.

[Creating material and technological basis of communism
in the U.S.S.R.] Sozdanie material'no-tehnicheskoi bazy
kommunizma v SSSR. Moskva, Izd-vo sots.-ekon.lit-ry,
1959. 102 p.

(MIRA 12:8)

(Technology)

ZVORYKIN, A.A., otv.red.; NEMCHENKO, V.S., zaveduyushchiy red.;
BUCHAROV, M.D., starshiy nauchnyy red.; KRISTOSTUR'YAN,
H.G., starshiy nauchnyy red.; CHMIRKASOV, V.I., starshiy
nauchnyy red.; ANDREYANOV, V.V., red.; GARKOVSKO, R.V.,
nauchnyy red.; KAUFMAN, V.M., mladshiy red.; PAKHMANOV,
V.F., mladshiy red.; KOSTI, S.D., tekhn.red.

[Biographical dictionary of figures in the natural sciences
and technology] Biograficheskii slovar' deiatel'stvi estestvo-
znaniiia i tekhniki. Otvetstvennyi red. A.A.Zvorykin. Red.
kollegiia: N.N.Anichkov i dr. Moskva, Gos.nauchn.izd-vo
"Bol'shia sovetskaia entsiklopediia." Vol.2. M - IA.
1959. 467 p.

(MIRA 12:7)

1. Redaktsiya istorii estestvoznaniiia i tekhniki Bol'shoi
Sovetskoy Entsiklopedii (for all except Zvorykin, Kosti).
(Scientists) (Technology--Biography)

ZVORYKIN, Anatoliy Alekseyevich, doktor ekonom.nauk; DUBROVSKIY, Yu.N.,
red.; ATROSHCHENKO, L.Ye., tekhn.red.

[Economic efficiency of production automation] Ekonomicheskaisa
effektivnost' avtomatizatsii proizvodstva. Moskva, Izd-vo
"Znanie," 1960. 45 p. (Vsesoiuznoe obshchestvo po rasprostraneniu
politicheskikh i nauchnykh znanii. Ser.3, Ekonomika, no.34).

(MIRA 13:12)

(Automation) (Labor productivity)
(Costs, Industrial)

ZVORYKIN, Anatoliy Alekseyevich, prof.; KIRZHNER, David Mironovich;
KUNDIN, Mikhail-Borisovich, inzh.; RACHKOVSKIY, S.Ya., prof., otd.
red.; ASTAKHOV, A.S., kand. ekonom. nauk, otd. red.; GOLUBYATNIKOVA,
G.S., red. izd-va; PROZOROVSKAYA, V.L., tekhn. red.

[Economics of the mining industry] Ekonomika gornoj promyshlennosti.
Izd.3., perer., dop. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po
gornomu delu, 1961. 439 p. (MIRA 14:9)
(Mineral industries)

Zvorykin, Anatoliy Alekseyvich

Ekonomika gornoj promyshlennosti [by] A.A. Zvorykin,
D.M. Kirzhner [i] M.B. Kundin. Izd. 3., perer. dop.
Moskva, Gosgortekhizdat, 1961.

439 p. tables.

Bibliography: p. 432-433.

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Automation of capitalist production is a disaster for the workers.
Sots. trud 6 no.5:30-40 My '61. (MIRA 14:6)
(Automation--Economic aspects)
(Labor and laboring classes)

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"Opredeleniye kul'tury i mestmaterial'noy kul'tury v obshchey kul'ture."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences,
Moscow, 3-10 Aug 64.

ZVORYKIN, A. A.

Ekonomika ugol'noy promyshlennosti SSSR (by) A.A. Zvorykin, D. M. Kundin. I zd. 2, perer I dop. Moskva, Ugletehizdat, 1954.
427 p. tables. 23 cm. Bibliography: p. (425)

Zvorykin, A. A.

Ekonomika ugol'noy promyshlennosti SSR (by) A.A. Zvorykin, D.M. Kirzhner i
M.B. Kundin. Izd. 2, perer 1 dop. Moscow, Ugletekhizdat, 1954.

427 p. tables. 23 cm.

Bibliography: p. (425)

ZVORYKIN, A.A.; MILONOV, Yu.K., otv. red.

[History of technology] Istoryia tekhniki. Moskva, Izd-vo
sots.-ekon.lit-ry, 1962. 772 p. (MIRA 16:9)
(Technology)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
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CHERNY SHEV, Vladimir Ivanovich; ZVORYKIN, A.A., otv. red.; KLESHCHEINOV,
M.A., red. izd-va; POLYAKOVA, T.V., tekhn. red.; GOLUB', S.P.,
tekhn. red.

[From the history of technical development in the first years
of the Soviet regime, 1917-1927] Iz istorii razvitiia tekhniki
v pervye gody sovetskoi vlasti, 1917-1927. Moskva, Izd-vo
Akad.nauk SSSR, 1962. 316 p. (MIRA 15:7)
(Industrialization) (Economic development)

ZVORYKIN, A.A., doktor ekon.nauk,prof.; OS'MOVA, N.I., nauchnyy
sotr.; CHERNYSHEV, V.I., kand.tekhn.nauk; SHUKHARDIN,S.V.,
kand.tekhn.nauk; MILONOV, Yu.K., kand.ekon.nauk,otv.red.;
BAKOVETSKIY,O., red.; STREPETOVA, M., mladshiy red.;
MOSKVINA, R., tekhn. red.

[History of technology]Istoriia tekhniki. [By] A.A.Zvorykin i
dr. Moskva, Sotskgiz, 1962. 772 p. (MIRA 15:8)

l. Akademiya nauk SSSR. Institut istorii yestestvoznaniya i
tekhniki.

(Technology)

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SHUHARDIN, S.V.; ZVORYKIN, A.A., redakter; NEMCHENKO, B.C., redakter;
ZELINKOVA, Ye.V., tekhnicheskiy redakter.

[Georg Agricola] Georgii Agrikola. Moskva, Izd-vo Akademii nauk
SSSR, 1955. 205 p.
(MLRA 9:5)
(Agricola, Georg, 1494-1555)

BROMBERG, Viktor Aleksandrovich; GAMAYUNOV, Nikolay Ivanovich;
ZVORYKIN, Aleksey Dmitriyevich; KUDRYAVTSEV, Vitaliy
Vasil'yevich; TEVEROVSKIY, Yevgeniy Ivanovich; EPSHTEYN,
Lev Abramovich; SHIROKOVA, M.M., tekhn. red.

[Mechanization of the manufacture of electrical insulating
materials of winding insulation, and drying as well as
saturating operations] Mekhanizatsiya proizvodstva elektro-
izoliatsionnykh materialov, izoliatsionno-obmotochnykh i
sushil'no-propitochnykh rabot. By V.A.Bromberg i dr. Moskva,
Gos. energ.izd-vo, 1961. 99 p. (MIRA 15:2)
(Electric insulators and insulation)

Protecting magnesia cement objects from humidity. A. V. Zvorkinje. *Bull. Inst. politek. Irano-Venizelsk* 13, 201-4 (in German 200-7) (1930).—8 describes tests on different plates which were made from magnesia cement treated with varnish (boiled linseed oil) to ascertain the penetration of humidity into these objects. The tests are tabulated and show that plates std. with varnish are fairly well protected against humidity.

A. V. Kostomy

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

160389 74

160389 419 000 JRC

0111101

0111101

0111101

BC

B-7-3

Preparation of chlorine derivatives of phosphorus from phosphates. A. J. Zvyagintz (J. Appl. Chem. Russ., 1955, 8, 1360-1367). A mixture of air and Cl₂ is passed through an intimate mixture of finely powdered phosphate and C at 700-1000°; the yields of PCl₅ according to Ca₃(PO₄)₂ + 6Cl₂ + 10 = 3CaCl₂ + 2PCl₅ + 4CO₂ increase with rising temp., amount of C, [Cl₂] and fineness of division of the substrates. R.T.

AIA-31A METALLURGICAL LITERATURE CLASSIFICATION

1950-1954 1955-1959 1960-1964 1965-1969 1970-1974 1975-1979 1980-1984 1985-1989 1990-1994 1995-1999 2000-2004 2005-2009 2010-2014 2015-2019 2020-2024 2025-2029 2030-2034 2035-2039 2040-2044 2045-2049 2050-2054 2055-2059 2060-2064 2065-2069 2070-2074 2075-2079 2080-2084 2085-2089 2090-2094 2095-2099 2100-2104 2105-2109 2110-2114 2115-2119 2120-2124 2125-2129 2130-2134 2135-2139 2140-2144 2145-2149 2150-2154 2155-2159 2160-2164 2165-2169 2170-2174 2175-2179 2180-2184 2185-2189 2190-2194 2195-2199 2200-2204 2205-2209 2210-2214 2215-2219 2220-2224 2225-2229 2230-2234 2235-2239 2240-2244 2245-2249 2250-2254 2255-2259 2260-2264 2265-2269 2270-2274 2275-2279 2280-2284 2285-2289 2290-2294 2295-2299 2300-2304 2305-2309 2310-2314 2315-2319 2320-2324 2325-2329 2330-2334 2335-2339 2340-2344 2345-2349 2350-2354 2355-2359 2360-2364 2365-2369 2370-2374 2375-2379 2380-2384 2385-2389 2390-2394 2395-2399 2400-2404 2405-2409 2410-2414 2415-2419 2420-2424 2425-2429 2430-2434 2435-2439 2440-2444 2445-2449 2450-2454 2455-2459 2460-2464 2465-2469 2470-2474 2475-2479 2480-2484 2485-2489 2490-2494 2495-2499 2500-2504 2505-2509 2510-2514 2515-2519 2520-2524 2525-2529 2530-2534 2535-2539 2540-2544 2545-2549 2550-2554 2555-2559 2560-2564 2565-2569 2570-2574 2575-2579 2580-2584 2585-2589 2590-2594 2595-2599 2600-2604 2605-2609 2610-2614 2615-2619 2620-2624 2625-2629 2630-2634 2635-2639 2640-2644 2645-2649 2650-2654 2655-2659 2660-2664 2665-2669 2670-2674 2675-2679 2680-2684 2685-2689 2690-2694 2695-2699 2700-2704 2705-2709 2710-2714 2715-2719 2720-2724 2725-2729 2730-2734 2735-2739 2740-2744 2745-2749 2750-2754 2755-2759 2760-2764 2765-2769 2770-2774 2775-2779 2780-2784 2785-2789 2790-2794 2795-2799 2800-2804 2805-2809 2810-2814 2815-2819 2820-2824 2825-2829 2830-2834 2835-2839 2840-2844 2845-2849 2850-2854 2855-2859 2860-2864 2865-2869 2870-2874 2875-2879 2880-2884 2885-2889 2890-2894 2895-2899 2900-2904 2905-2909 2910-2914 2915-2919 2920-2924 2925-2929 2930-2934 2935-2939 2940-2944 2945-2949 2950-2954 2955-2959 2960-2964 2965-2969 2970-2974 2975-2979 2980-2984 2985-2989 2990-2994 2995-2999 3000-3004 3005-3009 3010-3014 3015-3019 3020-3024 3025-3029 3030-3034 3035-3039 3040-3044 3045-3049 3050-3054 3055-3059 3060-3064 3065-3069 3070-3074 3075-3079 3080-3084 3085-3089 3090-3094 3095-3099 3100-3104 3105-3109 3110-3114 3115-3119 3120-3124 3125-3129 3130-3134 3135-3139 3140-3144 3145-3149 3150-3154 3155-3159 3160-3164 3165-3169 3170-3174 3175-3179 3180-3184 3185-3189 3190-3194 3195-3199 3200-3204 3205-3209 3210-3214 3215-3219 3220-3224 3225-3229 3230-3234 3235-3239 3240-3244 3245-3249 3250-3254 3255-3259 3260-3264 3265-3269 3270-3274 3275-3279 3280-3284 3285-3289 3290-3294 3295-3299 3300-3304 3305-3309 3310-3314 3315-3319 3320-3324 3325-3329 3330-3334 3335-3339 3340-3344 3345-3349 3350-3354 3355-3359 3360-3364 3365-3369 3370-3374 3375-3379 3380-3384 3385-3389 3390-3394 3395-3399 3400-3404 3405-3409 3410-3414 3415-3419 3420-3424 3425-3429 3430-3434 3435-3439 3440-3444 3445-3449 3450-3454 3455-3459 3460-3464 3465-3469 3470-3474 3475-3479 3480-3484 3485-3489 3490-3494 3495-3499 3500-3504 3505-3509 3510-3514 3515-3519 3520-3524 3525-3529 3530-3534 3535-3539 3540-3544 3545-3549 3550-3554 3555-3559 3560-3564 3565-3569 3570-3574 3575-3579 3580-3584 3585-3589 3590-3594 3595-3599 3600-3604 3605-3609 3610-3614 3615-3619 3620-3624 3625-3629 3630-3634 3635-3639 3640-3644 3645-3649 3650-3654 3655-3659 3660-3664 3665-3669 3670-3674 3675-3679 3680-3684 3685-3689 3690-3694 3695-3699 3700-3704 3705-3709 3710-3714 3715-3719 3720-3724 3725-3729 3730-3734 3735-3739 3740-3744 3745-3749 3750-3754 3755-3759 3760-3764 3765-3769 3770-3774 3775-3779 3780-3784 3785-3789 3790-3794 3795-3799 3800-3804 3805-3809 3810-3814 3815-3819 3820-3824 3825-3829 3830-3834 3835-3839 3840-3844 3845-3849 3850-3854 3855-3859 3860-3864 3865-3869 3870-3874 3875-3879 3880-3884 3885-3889 3890-3894 3895-3899 3900-3904 3905-3909 3910-3914 3915-3919 3920-3924 3925-3929 3930-3934 3935-3939 3940-3944 3945-3949 3950-3954 3955-3959 3960-3964 3965-3969 3970-3974 3975-3979 3980-3984 3985-3989 3990-3994 3995-3999 4000-4004 4005-4009 4010-4014 4015-4019 4020-4024 4025-4029 4030-4034 4035-4039 4040-4044 4045-4049 4050-4054 4055-4059 4060-4064 4065-4069 4070-4074 4075-4079 4080-4084 4085-4089 4090-4094 4095-4099 4100-4104 4105-4109 4110-4114 4115-4119 4120-4124 4125-4129 4130-4134 4135-4139 4140-4144 4145-4149 4150-4154 4155-4159 4160-4164 4165-4169 4170-4174 4175-4179 4180-4184 4185-4189 4190-4194 4195-4199 4200-4204 4205-4209 4210-4214 4215-4219 4220-4224 4225-4229 4230-4234 4235-4239 4240-4244 4245-4249 4250-4254 4255-4259 4260-4264 4265-4269 4270-4274 4275-4279 4280-4284 4285-4289 4290-4294 4295-4299 4300-4304 4305-4309 4310-4314 4315-4319 4320-4324 4325-4329 4330-4334 4335-4339 4340-4344 4345-4349 4350-4354 4355-4359 4360-4364 4365-4369 4370-4374 4375-4379 4380-4384 4385-4389 4390-4394 4395-4399 4400-4404 4405-4409 4410-4414 4415-4419 4420-4424 4425-4429 4430-4434 4435-4439 4440-4444 4445-4449 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4950-4954 4955-4959 4960-4964 4965-4969 4970-4974 4975-4979 4980-4984 4985-4989 4990-4994 4995-4999 5000-5004 5005-5009 5010-5014 5015-5019 5020-5024 5025-5029 5030-5034 5035-5039 5040-5044 5045-5049 5050-5054 5055-5059 5060-5064 5065-5069 5070-5074 5075-5079 5080-5084 5085-5089 5090-5094 5095-5099 5100-5104 5105-5109 5110-5114 5115-5119 5120-5124 5125-5129 5130-5134 5135-5139 5140-5144 5145-5149 5150-5154 5155-5159 5160-5164 5165-5169 5170-5174 5175-5179 5180-5184 5185-5189 5190-5194 5195-5199 5200-5204 5205-5209 5210-5214 5215-5219 5220-5224 5225-5229 5230-5234 5235-5239 5240-5244 5245-5249 5250-5254 5255-5259 5260-5264 5265-5269 5270-5274 5275-5279 5280-5284 5285-5289 5290-5294 5295-5299 5300-5304 5305-5309 5310-5314 5315-5319 5320-5324 5325-5329 5330-5334 5335-5339 5340-5344 5345-5349 5350-5354 5355-5359 5360-5364 5365-5369 5370-5374 5375-5379 5380-5384 5385-5389 5390-5394 5395-5399 5400-5404 5405-5409 5410-5414 5415-5419 5420-5424 5425-5429 5430-5434 5435-5439 5440-5444 5445-5449 5450-5454 5455-5459 5460-5464 5465-5469 5470-5474 5475-5479 5480-5484 5485-5489 5490-5494 5495-5499 5500-5504 5505-5509 5510-5514 5515-5519 5520-5524 5525-5529 5530-5534 5535-5539 5540-5544 5545-5549 5550-5554 5555-5559 5560-5564 5565-5569 5570-5574 5575-5579 5580-5584 5585-5589 5590-5594 5595-5599 5600-5604 5605-5609 5610-5614 5615-5619 5620-5624 5625-5629 5630-5634 5635-5639 5640-5644 5645-5649 5650-5654 5655-5659 5660-5664 5665-5669 5670-5674 5675-5679 5680-5684 5685-5689 5690-5694 5695-5699 5700-5704 5705-5709 5710-5714 5715-5719 5720-5724 5725-5729 5730-5734 5735-5739 5740-5744 5745-5749 5750-5754 5755-5759 5760-5764 5765-5769 5770-5774 5775-5779 5780-5784 5785-5789 5790-5794 5795-5799 5800-5804 5805-5809 5810-5814 5815-5819 5820-5824 5825-5829 5830-5834 5835-5839 5840-5844 5845-5849 5850-5854 5855-5859 5860-5864 5865-5869 5870-5874 5875-5879 5880-5884 5885-5889 5890-5894 5895-5899 5900-5904 5905-5909 5910-5914 5915-5919 5920-5924 5925-5929 5930-5934 5935-5939 5940-5944 5945-5949 5950-5954 5955-5959 5960-5964 5965-5969 5970-5974 5975-5979 5980-5984 5985-5989 5990-5994 5995-5999 6000-6004 6005-6009 6010-6014 6015-6019 6020-6024 6025-6029 6030-6034 6035-6039 6040-6044 6045-6049 6050-6054 6055-6059 6060-6064 6065-6069 6070-6074 6075-6079 6080-6084 6085-6089 6090-6094 6095-6099 6100-6104 6105-6109 6110-6114 6115-6119 6120-6124 6125-6129 6130-6134 6135-6139 6140-6144 6145-6149 6150-6154 6155-6159 6160-6164 6165-6169 6170-6174 6175-6179 6180-6184 6185-6189 6190-6194 6195-6199 6200-6204 6205-6209 6210-6214 6215-6219 6220-6224 6225-6229 6230-6234 6235-6239 6240-6244 6245-6249 6250-6254 6255-6259 6260-6264 6265-6269 6270-6274 6275-6279 6280-6284 6285-6289 6290-6294 6295-6299 6300-6304 6305-6309 6310-6314 6315-6319 6320-6324 6325-6329 6330-6334 6335-6339 6340-6344 6345-6349 6350-6354 6355-6359 6360-6364 6365-6369 6370-6374 6375-6379 6380-6384 6385-6389 6390-6394 6395-6399 6400-6404 6405-6409 6410-6414 6415-6419 6420-6424 6425-6429 6430-6434 6435-6439 6440-6444 6445-6449 6450-6454 6455-6459 6460-6464 6465-6469 6470-6474 6475-6479 6480-6484 6485-6489 6490-6494 6495-6499 6500-6504 6505-6509 6510-6514 6515-6519 6520-6524 6525-6529 6530-6534 6535-6539 6540-6544 6545-6549 6550-6554 6555-6559 6560-6564 6565-6569 6570-6574 6575-6579 6580-6584 6585-6589 6590-6594 6595-6599 6600-6604 6605-6609 6610-6614 6615-6619 6620-6624 6625-6629 6630-6634 6635-6639 6640-6644 6645-6649 6650-6654 6655-6659 6660-6664 6665-6669 6670-6674 6675-6679 6680-6684 6685-6689 6690-6694 6695-6699 6700-6704 6705-6709 6710-6714 6715-6719 6720-6724 6725-6729 6730-6734 6735-6739 6740-6744 6745-6749 6750-6754 6755-6759 6760-6764 6765-6769 6770-6774 6775-6779 6780-6784 6785-6789 6790-6794 6795-6799 6800-6804 6805-6809 6810-6814 6815-6819 6820-6824 6825-6829 6830-6834 6835-6839 6840-6844 6845-6849 6850-6854 6855-6859 6860-6864 6865-6869 6870-6874 6875-6879 6880-6884 6885-6889 6890-6894 6895-6899 6900-6904 6905-6909 6910-6914 6915-6919 6920-6924 6925-6929 6930-6934 6935-6939 6940-6944 6945-6949 6950-6954 6955-6959 6960-6964 6965-6969 6970-6974 6975-6979 6980-6984 6985-6989 6990-6994 6995-6999 7000-7004 7005-7009 7010-7014 7015-7019 7020-7024 7025-7029 7030-7034 7035-7039 7040-7044 7045-7049 7050-7054 7055-7059 7060-7064 7065-7069 7070-7074 7075-7079 7080-7084 7085-7089 7090-7094 7095-7099 7100-7104 7105-7109 7110-7114 7115-7119 7120-7124 7125-7129 7130-7134 7135-7139 7140-7144 7145-7149 7150-7154 7155-7159 7160-7164 7165-7169 7170-7174 7175-7179 7180-7184 7185-7189 7190-7194 7195-7199 7200-7204 7205-7209 7210-7214 7215-7219 7220-7224 7225-7229 7230-7234 7235-7239 7240-7244 7245-7249 7250-7254 7255-7259 7260-7264 7265-7269 7270-7274 7275-7279 7280-7284 7285-7289 7290-7294 7295-7299 7300-7304 7305-7309 7310-7314 7315-7319 7320-7324 7325-7329 7330-7334 7335-7339 7340-7344 7345-7349 7350-7354 7355-7359 7360-7364 7365-7369 7370-7374 7375-7379 7380-7384 7385-7389 7390-739

1 APPROVED FOR RELEASE: Thursday, September 16, 2002 CIA-RDP86-00513R002065720002-7-1
1 APPROVED FOR RELEASE: Thursday, September 16, 2002 CIA-RDP86-00513R002065720002-7-1

Apparatus for the conversion of yellow into red phosphorus. A. V. Zverkin. Russ. 46,100, May 31, 1905. Molten yellow P is carried off by an inert gas and passed through molten, high-melting substances. Construction details are given.

ca

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ASSISTANT METALLURGICAL LITERATURE CLASSIFICATION

Decomposition of sulfates with chlorine. A. Vn. Zverubin, J. Applied Chem. (U.S.S.R.) 9, 1-8(1930); C. A. 30, 13081.---Finely ground Cu, Ba, Sr and Na sulfates were heated at 850-1100° in an elec. muffle furnace in a stream of Cl₂. Under identical conditions at 1050° the yields of CaCl₂, BaCl₂ and NaCl were 42.62, 10.2 and 78.0% theoretical. Lengthening the reaction time and increase in quantity of Cl₂ and temperature the yield. Addn. of NaCl (about 5%) to sulfates is beneficial but SiO₂ has an unfavorable effect. Cl₂ is also effective but interferes with purification of products. V. A. K.

APPENDIX METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000

Dynamite of preparation of red phosphorus.
I. A. J. ZYKOVICH (J. Appl. Chem. Russ., 1936, 9, 778-785).—Complete conversion of white into red P is attained in 15–30 min. at 400–500°. Red P, $\text{Fe}_2(\text{O}_4)_3$, SiO_2 , U_3O_8 , and Se are without catalytic action.

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A-1

ASA-SEA METALLURGICAL LITERATURE CLASSIFICATION

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ca

Dynamics of red phosphorus production. I. A. Ya.
Lavrent'ev. *J. Applied Chem.* (U.S.S.R.), 17(1944), 1711-1716
(Bull. Akad. Nauk SSSR, 1944, No. 10).—A lab. expt. on the production of red P are described. Yellow P₄ with and without the addition of catalysts, was charged into a glass-stoppered ampoule and the stopper was tightly sealed with a salt of Na₂SiO₃ and CaO. The ampoule, inserted into a salted glass tube, was submerged into sand and heated by an electric furnace at 220-300° for various periods of time. To determine the degree of allotropic conversion, the reaction ampoule was crushed, the contents were treated with C₆H₆, the red P was filtered off by suction through a Schott porous filter and the filter, after drying in the air and at 10° in a drying oven, was weighed. The rate of the allotropic conversion is a function of time and temp. Heating yellow P at 230-240° for 3-47 hrs. resulted in a product containing 16.9-93% red P. Heating at 330-350° for 18-25 hrs. yielded a mixt. with 71.0-95% red P. A 100% conversion was effected at 400° and 500° in 1 hr. to 1 hr. and 20 min. The addition of red P, silica gel, Fe, FeCl₃, Se, U₃O₈ and CaO failed to catalyze the reaction. Increasing time and temp. increased the hardness of the red P and the intensity of its coloration from a bright red to a deep violet. Chas. Blaine

Chau, Winnie

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PPROVED FOR RELEASE: Thursday, September 26, 2002 - CIA-RDP98A0013B992965720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RD-80-00515R002009720002-7

B C

9-1

Quaternary system $\text{K}_2\text{O}-\text{NH}_3-\text{P}_2\text{O}_5-\text{H}_2\text{O}$.
 Solid solutions in the system $\text{K}_2\text{O}-\text{PO}_5-\text{H}_2\text{O}$. N. S. DOKUCHAEVA and A. J. SYKIREV (Kalin., 1937, No. 2, 14-24).—The 20° and 50° isotherms have been determined. The results of Aikenasy and Neesler (A., 1930, 873) indicating the existence of a continuous series of solid solutions have been confirmed. D. G.

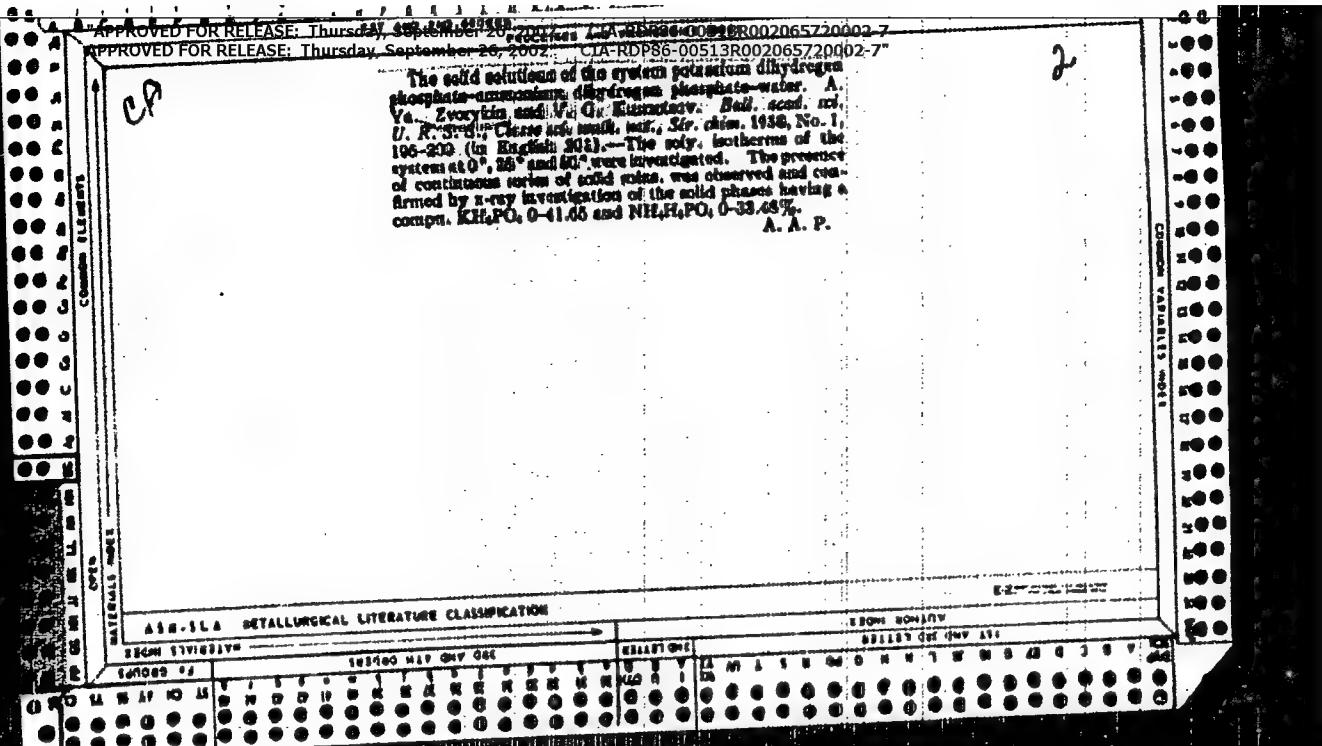
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"APPROVED FOR RELEASE: Thursday, September 26, 2002" (b) (3) DPP
"APPROVED FOR RELEASE: Thursday, September 26, 2002" CIA-RDP86-00513R002065720002-7

The solid solutions of the system potassium dihydrogen phosphate-urea, dihydrogen phosphate-water. A. V. Zverikin and V. I. Eremeev. *Bull. Acad. sci. U. R. S.S.R., Classe des sciences, math., Sci. chim.* 1938, No. 1, 106-210. (In English.)—The solv. isotherms of the system at 20°, 30° and 40° were investigated. The presence of coexisting series of solid phases was observed and confirmed by x-ray investigation of the solid phases having a compn. K_2HPO_4 , 0-41.65 and $NH_4H_2PO_4$, 0-33-45. A. A. P.

A. A. P.



Gypsum problem in the Soviet Union. N. I. Bulyalov
and A. Ya. Zvezkin. *Ann. sectors and phys. Chem.*
1967, *Issue 1*, p. 11, 327-330 (1968). A review of the results of a geological survey in the Western Kazakhstan with a discovery of some 300 complex salt domes and large veins of gypsum and anhydrite with recommendations for the investigation of the geochemical and petrographic properties and economic exploitation of the deposits in the light of American practice with similar deposits in Texas and Louisiana. Chas. Blane

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Chemical literature

Geology

Notes

Geology

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PREVIEW AND 多媒体视点与设计 305

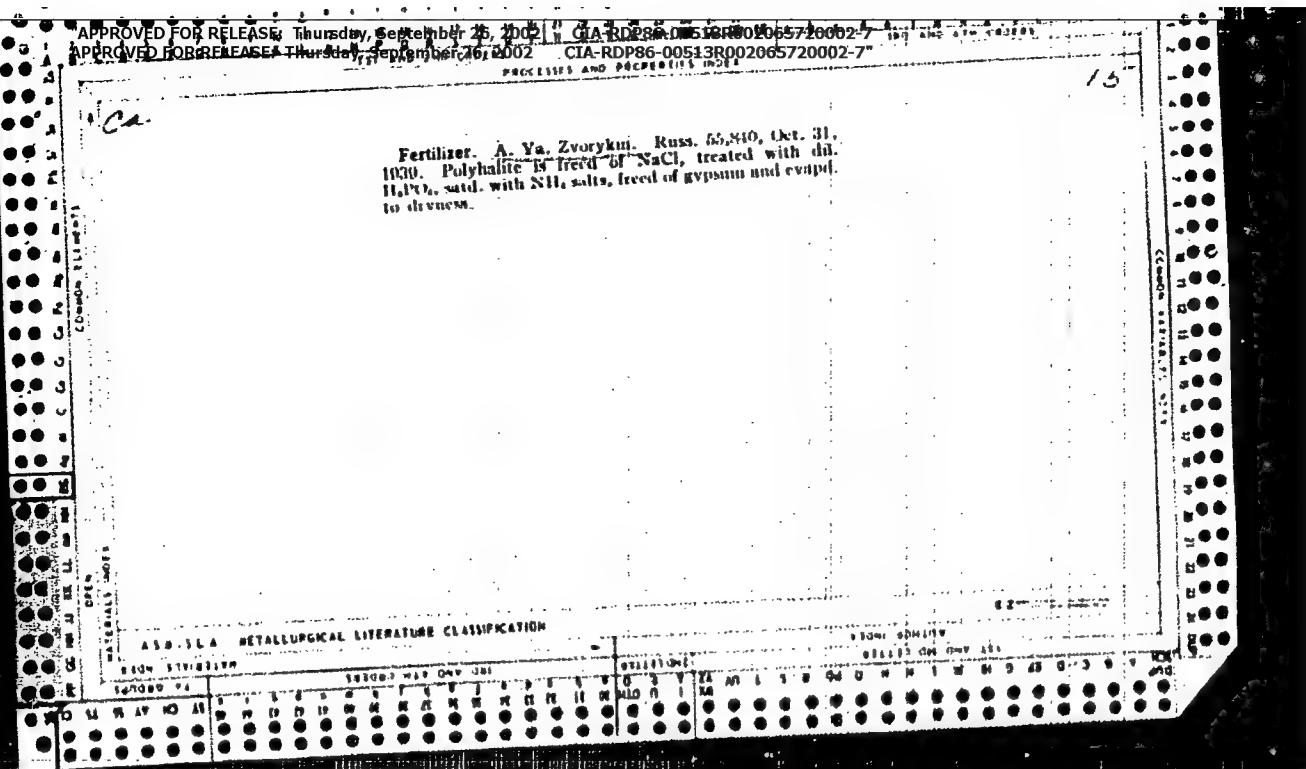
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Fertilizers. A. N. Zyotykin, Russ. 56,025, Nov. 30, 1939. Solna, contg. 35-40% ammonium phosphate are treated with a 2-18% soln. of KCl at temps. of -5 to +65°.

ASA-SEA METALLURGICAL LITERATURE CLASSIFICATION

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Fertilizer. A. Ya. Zvorykin. Russ. 55,840, Oct. 31, 1930. Polyhalite is freed of NaCl, treated with dil. H₂SO₄, and with Na₂ salts, freed of gypsum and evapd. to dryness.



28

CA

The heating curves of carbohydrates. A. Ya. Zvorykin and A. L. Sokolovskii. *J. Applied Chem. (U.S.S.R.)* 12, 1430 (1939).—A preliminary report concerning the heating curves of sucrose, dextrose, levulose, caramel, a mixt. of invert sugar and sugar and sugar-molasses must is given. Each curve had 3 transformation periods as shown by the endothermic effects. The identification of the transformation products will be done in the near future.
A. A. Podgorny

ASA-31A METALLURGICAL LITERATURE CLASSIFICATION

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TO ALL DIVISIONS

Concentrated fertilizers containing phosphorus, potassium, ammonia and magnesium from polyhalite. A. V. Zver'ykin and V. Ya. Keknich. *Comp. rend. acad. sci. U.S.S.R.* 3, 27, 464-5 (1940) (in English).—Utilization of polyhalite ($K_2SO_4 \cdot MgSO_4 \cdot 2CaSO_4 \cdot 2H_2O$) is a most urgent problem, where large deposits are indicated in several districts of Western Kazakhstan and the Middle Volga. K. and Z. state that the industrial conversion of the American polyhalite into K_2SO_4 as suggested in the literature and in patents is extremely complicated and does not appear remunerative inasmuch as its ultimate product is a very weak K_2SO_4 soln. whose evapn. is hardly profitable. In view of the fact that many crops cultivated in their country, as tobacco, citrus plants or flax are in need of Cl-free fertilizers contg. K, NH₃, Mg and phosphate, the authors treated polyhalite with com., H_2PO_4 and salted. the liquid mass with NH₃; products of the following percentage compn. were obtained: Water-sol. fraction NH₃ 17.20, P₂O₅ 20.80, CaO 0.48, MgO 0.37, K₂O 4.81, sulfate 15.93; salt compn. $(NH_4)_2HPO_4$ 43.68, K_2HPO_4 8.37, $CaSO_4$ 1.17, $MgSO_4$ 1.13, $(NH_4)_2SO_4$ 19.56 and water-insol. residue 24.97. After soln. in 20% HCl: NH₃ 18.05, P₂O₅ 35.79, CaO 0.01, MgO 1.27, K₂O 5.15, sulfate 19.94, residue insol. in HCl 0.50; salt compn. $(NH_4)_2HPO_4$ 30.37, K_2HPO_4 9.53, $CaSO_4$ 14.64, $(NH_4)_2SO_4$ 10.45, $MgSO_4$ 3.79, residue insol. in HCl 0.60. In order to lower the content of water-insol. fraction, the polyhalite was mixed with dild. com. H_2PO_4 and the liquid fraction sep'd. from the insol. fraction by filtration. The filtrate was then salted. with NH₃ and both liquid and insol. salt fractions were analyzed. Water-sol. fraction percentage compn. was: NH₃ 13.82, P₂O₅ 49.89, K₂O 3.10, sulfate 6.48, water-insol. residue 9.22; salt compn., KH_2PO_4 8.06, $NH_4H_2PO_4$

73.27, $(NH_4)_2SO_4$ 8.01 and water-insol. residue 0.22. After soln. in 20% HCl: NH₃ 14.41, P₂O₅ 54.25, MgO 0.44, K₂O 4.08, sulfate 0.71, residue insol. in HCl 0.00; salt compn. KH_2PO_4 11.59, $NH_4H_2PO_4$ 77.93, $(NH_4)_2SO_4$ 0.23, $MgSO_4$ 1.31 and residue insol. in HCl 0.00. The above data favor the manuf. of concn. fertilizers from polyhalite according to the method patented by Z. (Russ. pat. 25,810, C. A. 34, 3008). Further work on the phys. and chem. properties of the product with reference to its utilization in agriculture and to its equil. diagram is in progress. W. A. Cook

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CA

The relation between the degree of conversion of sulfur in the oxidation of sulfide and the changes in the solid and the gaseous phases. A. V. Zveryal'yanov. Nauk S.S.R., Referaty, Odz. Khim. Nauk 1943, 31.—The degree of conversion Z (%) of S into SO_2 on roasting can be detd. indirectly from the amt. δ of SO_2 (in g.) in the gas and the increase of wt. d of the sample, by $Z = 13720 / d + 2.23 \delta / dm$ where d = initial wt. $m = 1$, sulfide in the sample.

18

AMMELA METALLURGICAL LITERATURE CLASSIFICATION

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1970-1971

Application of physicochemical analysis to the study of complex catalysts. The activity of the oxides of cobalt, nickel, and copper in the decomposition of hydrogen peroxide. A. V. Zvezdin and F. M. Perel'man. *J. Phys. Chem. (U.S.S.R.)* 20, 1095-1101 (1949) (in Russian).

The reaction consists of the decomposition of H_2O_2 in the presence of equimolar amounts of CuO , a Co oxide, and NiO , were in the ratio 0.013:1.20:0.020. Among the many binary and ternary mixtures of these oxides only those containing about 80% of Co and 20% of Ni or about 80% of Co, 15% of Ni, and 5% of Cu were considerably more active than the Co oxide; in their presence the reaction const. reached 1.40. J. J. Bikerman

J. Birkhäuser

ASME-AIAA METALLURGICAL LITERATURE CLASSIFICATION

ZVORTZIN, A. 1947
"Concerning the Reactions of Oxides and Salts in Solid State." Sub 29 Sep 47,
Moscow Inst of Fine Chemical Technology imeni M. V. Lomonosov

Dissertations presented for degrees in science and engineering in Moscow in
1947

SO: Sum No. 457, 18 Apr 55

APPROVED FOR RELEASE: Thursday, September 18, 1969
APPROVED FOR RELEASE: Thursday, September 18, 1969

The suspension was thoroughly shaken, the ppt. allowed to settle, and its vol. observed. This procedure was repeated over a number of days. As the ppt. aged, its vol. decreased. Immediately after shaking, the contraction was rapid and after approx. 15-18 min. it leveled off. The results of the observations were plotted, with time in min. on the abscissa and vol. in cc. on the ordinate. A tangent drawn from the point where the curve leveled off (15-18 min.) and extended to the ordinate gave the vol. assumed to be the max. that would be reached if the ppt. immediately after shaking if it were uniformly dispersed and if it were not acted upon by gravity. This vol. decreased as the hydroxide aged and it was different for different hydroxides. The ratio of the vol. assumed by a hydroxide when it settles freely in a water-filled cylinder and the real, vol. of the same hydroxide is referred to as the "active vol." Each of the hydroxides is referred to as the vol., which diminished with age. Plotting $\log \frac{v}{v_0}$ (time) on the abscissa and $\log v$ (vol.) as ordinate gave a series of straight lines representing the change of the active vol. with time. From these curves it can be seen that the stability of hydroxides decreases in the order $\text{Mn}, \text{Fe}, \text{Ni}, \text{Co}$, and Cu . The results were tested on mixed Co and Cu hydroxide catalyst. The activity of these catalysts was parallel to changes in their specific surface.

M. T. TRAVIS

ASOCIACION METALURGICA ARGENTINA

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2

Solid solutions of potassium and ammonium phosphates. N. S. Romanov, A. V. Zverev, and V. Ya. Kachalov. Izvest. Akad. Nauk SSSR, No. 3, 108-110 (1948).—The purpose was to ascertain the optimum conditions for producing $\text{NH}_4\text{H}_2\text{PO}_4$ to be used as a caustic fertilizer. A new was investigated the quaternary system $\text{KH}_2\text{PO}_4 + \text{KCl} \rightleftharpoons \text{K}_2\text{HPO}_4 + \text{NH}_4\text{Cl}$ at 20°. To this end were studied $\text{KH}_2\text{PO}_4 + \text{NH}_4\text{H}_2\text{PO}_4 + \text{H}_2\text{O}$, $\text{KCl} + \text{K}_2\text{HPO}_4 + \text{H}_2\text{O}$, $\text{KCl} + \text{NH}_4\text{Cl} + \text{NH}_4\text{H}_2\text{PO}_4 + \text{H}_2\text{O}$. The results were plotted in the form of a phase diagram projected on the plane $\text{K}_2\text{HPO}_4 - \text{NH}_4\text{H}_2\text{PO}_4 - \text{KCl} - \text{NH}_4\text{Cl}$. Next were used the solv. of KCl and NH_4Cl in mol. ratios of $(\text{NH}_4)_2\text{PO}_4$ at various concns. of NH_4 at 20 and 0°. The results are tabulated. The phase diagrams indicated a simple and effective process for the production of $\text{NH}_4\text{H}_2\text{PO}_4$ — $\text{NH}_4\text{H}_2\text{PO}_4$ consisting of passing NH_3 into a soln. of K_2HPO_4 and KCl . The solid phase was separated. In this step 80-90% of the used P_2O_5 is used up. The mother liquor contg. the balance of H_2PO_4 is treated with NH_3 , thereby prodg. $(\text{NH}_4)_2\text{HPO}_4$. This gives off NH_3 , leaving $(\text{NH}_4)_2\text{PO}_4$. In these 2 steps 80-90% of the P_2O_5 is utilized. The 2nd mother liquor can be treated to yield $\text{KCl}, \text{NH}_4\text{Cl}$, or, if desired, glauberite. M. Hoshik.

ZVOR "APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

32537. ZVORYKIN, A. Ya i TIMKHEVA, N. I. Spektris solej i okislov. Zhurnal prikl. khimii, 1949, No 10, s. 1063-67

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

Irregular multidimensional figures in physicochemical analysis. F. M. Perel'man and A. Ya. Zvorykin (N. S. Kurnakov Inst. of Gen. and Inorg. Chem., Acad. Sci. U.S.S.R.). Izv. Sektora Fiz.-Khim. Anal. Inst. Otsch. Akad. Nauk. Khim., Akad. Nauk S.S.R. 19, 144-50 (1949).—The use of multidimensional diagrams for presentation of the compn. and properties of complex systems is discussed. The geometry of such figures is analyzed. M. Hoshi.

C

Sintering of salts and oxides. A. V. ZALMYKIN AND N. I. TIMOKHINA. *J. Applied Chem. (USSR)*, 22 [10] 1033-07 (1949).—Powders of CaF_2 were fired in a porcelain crucible at 400°, 500°, 600°, and 700°C., while powders of SiO_2 , CaCO_3 , and Fe_2O_3 were fired at temperatures from about 600° to 1100°. The compressive strength of the sintered shapes was determined under a constantly increasing load. Curves of strength vs. temperature indicate that strength of sintering is a characteristic of the solid material and reflects the changes occurring during the various temperature intervals. Experimental results support the following mechanism of sintering: Sintering is above all a diffusion of particles in the solid material; the mobility of particles and diffusion increase with rising temperature. The individual particles make contact in some places only, so that at first diffusion takes place gradually at these points of contact. In determining the strength of sintering, destruction takes place chiefly at these points of diffusion because here the particles are bound to one another less strongly than in the originally crystalline material. As a result of the crushing of the shape, the graining of the material changes and, in addition to the original grains, larger and smaller grains are also obtained. R.Z.K.

ASA-11A METALLURGICAL LITERATURE CLASSIFICATION										GENERAL INDEX									
SUBJ. SUBJECT					1930-83 MRP ONLY ODS					1930-83 MRP ONLY ODS					1930-83 MRP ONLY ODS				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

CA

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

Sintering of carbonates. A. Ya. Zvorykin, Zhur. Pribor. Khim. 24, 1131-5 (1981). Chlorides of Li, Na, Be, Mg, Ca, Sr, Cd, and Ba were subjected to temps. between 100 and 1000°. As was proved for chlorides (C.A. 44, 8627) the change of mech. strength on sintering depends on the energy of crystal lattices. For energy computation a formula by Kapustinskij was used. $U = 287.5 \left[\frac{Z_1 Z_2}{r_1 + r_2} \right] \left(1 - \frac{0.345}{r_1 + r_2} \right)$, where $r_1 + r_2$ = sum of ionic radii, Z_1 = no. of ions, and Z_1 and Z_2 = valencies of ions. S. Strelcov

ZVORYKIN, A.Ya.; PEREL'MAN, F.M.

Solubility isotherm 25° of the system $(\text{NH}_4)_2\text{MoO}_4 - (\text{NH}_4)_2\text{SO}_4 - \text{H}_2\text{O}$.
Khim.redk.elem. no.1:52-57 '54. (MLRA 8:3)

1. Institut obshchey i neorganicheskoy khimii im.N.S.Kurnakova
AN SSSR.

(Solubility) (Ammonium salts)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.Ya., kandidat khimicheskikh nauk.

New concentrated non-chlorinated fertilizer. Vest. AN SSSR 24
no.3:64-66 Mr '54. (MLRA 7:3)
(Fertilizers and manures)

ZVORYKIN, O.Ye.; STEPANOV, I.S., inshener,
ZELIKMAN, A.N.; SAMSONOV, G.V.; KREYN, O.Ye.; STEPANOV, I.S., inshener,
retsenzent; TAHAYEV, I.V., retsenzent; POGODIN, S.A., professor,
doktor, zasluzhennyy deyatel' nauki i tekhniki, retsenzent; RODE,
Ye.Ye., professor, doktor, retsenzent; ABRIKOSOV, N.N., doktor
khimicheskikh nauk, retsenzent; SHAMRAY, F.I., doktor khimicheskikh
nauk, retsenzent; MOROZOV, I.S., kandidat khimicheskikh nauk,
retsenzent; BOOM, Ye.A., kandidat khimicheskikh nauk, retsenzent;
NIKOLAEV, N.S., kandidat khimicheskikh nauk, retsenzent; ZVORYKIN,
A.Ya., kandidat khimicheskikh nauk, retsenzent; BASHILOVA, N.I.,
kandidat khimicheskikh nauk, retsenzent; VYSOTSKAYA, V.N., redaktor;
KAMAYEVA, O.M., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor

[Metallurgy of rare metals] Metallurgija redkikh metallov. Moskva,
Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii.
1954. 414 p. (MLRA 7:9)

1. Chlen-korrespondent Akademii nauk SSSR (for Tananayev)
(Metals, Rare--Metallurgy)

~~SECRET~~
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R00200657Z/20002-Z
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R00200657Z/20002-Z

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-Q0513R002065720002-7
APPROVED FOR RELEASE: 2006 YEAR CIA-RDP86-Q0513R002065720002-7
NIKOLAEV, N.S.,
doktor khimicheskikh nauk, nauchnyy redaktor; GOLUBKOVA, V.A.,
redaktor; YUSFINA, N.L., tekhnicheskiy redaktor

[How chemistry originated and with what it is concerned] Kak
voznikla khimiia i chem ona zanimetsia. Moskva, Goskul'tpro-
svetizdat, 1956. 14 p. and 5 l. (MLRA 10:2)
(Chemistry--History)

Physicochemical principles in the production of a new form of chlorine-free concentrated fertilizers. Zhur.neorg.khim. 1 no. 7:1523-1532 J1 '56. (MLRA 9:11)

(Phosphates)

5(8) TABLE I BOOK REPORTS 507/252

Akademika i doktorov. Institut obshchey i neorganicheskoy khimii.

Rabochiye polucheniya, 1971, 1 (Chemistry of Rare Elements, No. 5) Moscow, Izd-vo Akad. Nauk, 1971. 155 p. 4,500 copies printed. Printed slip inserted.

No. of Participants: 10; No. of Authors: 10; No. of Editors: 10.

Editorial Board: I. V. Tsvetkov (Chairman), S. A. Pogodin, Ye. Ya.

Mil'shtein, V. G. Trotsik, and O. P. Bogach (Secretary).

PURPOSE: The book is intended for scientists and engineers concerned with the

study and utilization of rare elements.

CONTENTS: The book is a collection of papers on fundamental researches in the chemistry of rare elements conducted at the Institute of General and Inorganic Chemistry, Leningrad, I. V. Tsvetkov (Chairman of General and Inorganic Chemistry Board, I. S. Bursakov). No generalities are mentioned, there are 215 references.

27 Series, 12 English, 11 German, 15 French, 4 Italian, and 1 Japanese.

Tsvetkov, V. Ye. and V. S. Volkova. Investigation of Solubility in

the System Lithium Carbonate-Lithium Chloroaluminate at 50°C. 3

Buravlev, A. Ye. and I. P. Burovskaya. Vapor Pressure of Saturated

Solutions in the System $(\text{Na}_2\text{CO}_3 - \text{LiCl}) - \text{H}_2\text{O}$. 6

Bogach, O. V., V. B. Mal'zev, V. Ye. Tsvetkov, and N. F. Chizhik.

Determination of Solubility in the System Lithium Chloroaluminate

- Water at 50°C. 10

Chizhik, N. F. and N. I. Levina. Hydrogen Peroxides

and their Analytical Significance. 12

Chizhik, N. F. and N. V. Smirnov. Gallium Peroxydes and Their

Chemical Properties. 14

Chizhik, N. F. Investigation of the Interaction of Zinc or Gallium

and Gallium in Aqueous Solution. 16

Chizhik, N. F. and I. V. Smirnov. Investigation of the Reaction of

Gallium with Potassium Nitrate. 18

Chizhik, N. F. and A. P. Kostrikina. Synthesis and Characteristics

of the Compounds of Gallium and Zinc. 20

Chizhik, N. F. and V. M. Pavlenko. Fundamental Investigations of

the Properties of the Compound $\text{Zn}_2\text{Ga}_3\text{O}_7$. 22

Chizhik, N. F. The Corrosive Method of Determination of Gallium

Al'merits, I. I., V. Ye. Tsvetkov, and I. Z. Ermak'. Quantitative Determination of

Gallium with Pyridine. 22

Fedorova, T. Ye., A. A. Gal'yayev, and N. F. Al'merits. Determination

of Polyphosphates. 22

Fedorova, T. Ye. A Problem of Compiling a Reference Guide on Rare

Earth Metals. 23

REFERENCES: Library of Congress

Count: 27

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150-2-29

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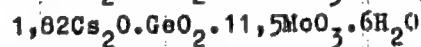
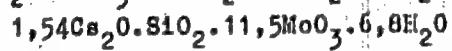
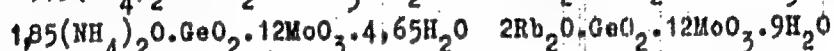
78-3-6-14/30

AUTHORS: Perel'man, F. M., Zvorykin, A. Ya., Yakubovskaya, T. N.

TITLE: Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon (Nekotoryye malorastvorimyye soli geteropolikislot germaniya i kremniya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr. 6,
pp. 1374 - 1380 (USSR)

ABSTRACT: In the present paper the difficultly soluble ammonia, rubidium and cesium salts of the germanium-and silicon-molybdenum-heteropolyacid were investigated. The synthesis of germanium-molybdenum and silicon-molybdenum-heteropolyacid as ammonia, rubidium and cesium salts was described. The following compounds were produced:



Card 1/4

78-3-6-14/30

Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon

The x-ray analyses show that all these salts are isomorphous. The solubility of the ammonia, rubidium and cesium salts of the silicon-molybdenum, and germanium-molybdenum-heteropolyacids at 25°C is investigated. The solubility of ammonia salt of Si-Mo-heteropolyacid is 7,55% of rubidium salt of Si-Mo-heteropolyacid is 0,475%, of cesium salt of Si-Mo-heteropolyacid 0,123%, of ammonia-Ge-Mo-acid 7,78%, of Rb-Ge-Mo-acid 0,90% and Cs-Ge-Mo-acid 0,075%. The solubility of all six salts was also determined in aqueous sulfuric acid solutions of ammonia and rubidium salts at a concentration of 1,5 - 40% sulfuric acid and of cesium salt at a concentration of 1,5-25% sulfuric acid. Also the solubility of cesium salts of the above mentioned heteropolyacids in nitric solutions at concentrations of 2% and 5,3% HNO_3 as well as the solubility of oxalic acid at concentrations of 2-9% HNO_3 was determined. Sulfuric acid considerably reduces the solubility of the ammonia, rubidium and cesium salts of the silicon-molybdenum-, and germanium-molybdenum-

Card 2/4

78-3-6-14/30

Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon

-heteropolyacids. On this occasion the solubility of the ammonia salts of the above mentioned heteropolyacids is ten times greater than the solubility of the corresponding rubidium salts. The cesium salt of the Ge-Mo-heteropolyacid has a solubility ten times smaller than that of the corresponding Rb-Ge-Mo-acid. Cesium salt of the Si-Mo-acid has a solubility hundred times smaller than the corresponding Rb-Mo-acid. It was found that the salts of the Gr-Mo-heteropolyacids are more easily soluble than the corresponding salts of the Si-Mo-acids almost in all cases especially in concentrated acids. Cesium salt of the Si-Mo-acid shows the smallest solubility. Its solubility in aqueous sulfuric solution is 0,004-0,005%. The solubility of cesium salt of the Ge-Mo-acid in the same sulfuric solution is 0,04%. There are 5 figures, 8 tables, and 19 references, 8 of which are Soviet.

Card 3/4

78-3-6-14/30

Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova,
AN SSSR (Institute of General and Inorganic Chemistry imeni
N. S. Kurnakov, AN USSR)

SUBMITTED: May 21, 1957

AVAILABLE: Library of Congress

1. Germanium compounds 2. Silicon compounds 3. Heteropolyacids
--Salts 4. Salts--Solubility 5. Chemical compounds--Production

Card 4/4

76-32-3-24/43

AUTHORS:

Zvorykin, A. Ya., Perel'man, F. M., Shakhova, S. K.

TITLE:

On the Catalytic Activity of Rare Elements in the Reaction
of the Decomposition of Hydrogen Peroxide (O kataliticheskoy
aktivnosti redkikh elementov v reaktsii razlozheniya perekisi
vodoroda. I.)

PERIODICAL:

Zhurnal Fizicheskoy Khimii, 1958, Vol 32, Nr 3,
pp 654 - 658 (USSR)

ABSTRACT:

Mixed catalysts of salts of rare elements are investigated in the present paper, the attention being focused on the influence of the ratio of catalyst components, as well as that of the temperature and the pH, upon the catalytic activity. In order to bring about a simultaneous mixture of both catalyst components with the hydrogen peroxide solution, a glass container was constructed in which two little dishes with the catalysts on a glass holder are located, from where they fall into the liquid upon mechanical agitation of the system. The velocity of decomposition of hydrogen peroxide was measured at 25°C and a pH of 8.0. The experiments performed with niobium oxalate

Card 1/3

76-32-3-24/43

On the Catalytic Activity of Rare Elements in the Reaction of the Decomposition of Hydrogen Peroxide

Showed a negative catalytic action of niobium upon other catalysts, especially cobalt chloride. Sodium molybdate in combination with copper chloride ($\text{Na}_2\text{MoO}_4 \cdot \text{CuCl}_2$) showed an increase of the catalytic action, which exceeded that of the individual components several times. Investigations with zirconium sulfate showed that in the system zirconium-sulfate/manganese-dioxide, the curve of the catalytic activity contains a maximum from which a complicated change of the catalytic activity may be deduced. A table of the changes of velocity and of the values of the reaction constant of the last-mentioned system is given from which it may be seen that the activity of zirconium sulfate at the beginning of the examination is higher, that it then drops to a lower value and remains constant. There are 4 figures, 1 table, and 9 references, 6 of which are Soviet.

Card 2/3

76-32-3-24/43

On the Catalytic Activity of Rare Elements in the Reaction of the Decomposition of Hydrogen Peroxide

ASSOCIATION: Akademiya nauk SSSR, Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova (AS USSR, Institute of General and Inorganic Chemistry imeni N. S. Kurnakov)

SUBMITTED: November 30, 1956

Card 3/3

5(4)

AUTHORS:

Perel'man, F. M., Zvorykin, A. Ya, Shakhovn, S. K.

SOV/76-33-2-34/45

TITLE:

The Catalytic Activity of the Rare Elements in the Decomposition of Hydrogen Peroxide II (O kataliticheskoy aktivnosti redkikh elementov v reaktsii razlozheniya perekisi vodoroda II)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2,
pp 452 - 456 (USSR)

ABSTRACT:

The method of the work reported here was the same as was used in the previous paper, i.e., a simultaneous addition of both catalysts at the beginning of the reaction. Investigated were sodium gallate (I), thorium nitrate (II), titanium sulfate (III), and germanium chloride (IV), alone and together with the chlorides of cobalt, copper, and iron also of MnO₂ at 25°C and pH = 8.0. It was observed that a combination of (I) with CuCl₂ increased the catalytic activity and that this was greater than the additive values of the single components. All the catalysts of this system are unstable and lose their activity quickly (Fig 1). The system (II) - CuCl₂

Card 1/3

The Catalytic Activity of the Rare Elements in the
Decomposition of Hydrogen Peroxide II

SOV/76-33-2-34/45

and (II) - MnO_2 (Figs 2,3) show also an increased catalytic effect upon the decomposition of H_2O_2 . With the first system the activity is doubled and with the second system the activity is 4.6 times the additive value of the components using a content of 30% (II). The system (II) - MnO_2 is more stable in its catalytic activity than the above mentioned combinations of (I). An increase of 5 to 2.5 times in activity above the additive values of the components was observed for the (III)- $CuCl_2$ and (III) - $CoCl_2$ systems, and the maximum activity was found to occur with a content of 50% (III) (Figs 4,5). The (III)- $CoCl_2$ systems are high in activity but very unstable, while (III)- $CuCl_2$ are stabler combinations. In the (IV)- $CuCl_2$ system a smaller increase in activity was observed (Fig 6). The experimental results show that the maximum activity occurs with the compositions of a 1:1 molar ratio of the components. There are 6 figures and 3 references, 2 of which are Soviet.

Card 2/3

The Catalytic Activity of the Rare Elements in the
Decomposition of Hydrogen Peroxide II SOV/76-33-2-34/45

ASSOCIATION: Akademiya nauk SSSR, Institut obshchey i neorganicheskoy
khimii im. N. S. Kurnakova (Academy of Sciences, USSR,
Institute for General and Inorganic Chemistry imeni N. S.
Kurnakov)

SUBMITTED: July 30, 1957

Card 3/3

5.2000

AUTHORS:

Perel'man, F. M., Zvorykin, A. Ya.,
Demina, G. A.

69030

S/078/60/005/04/034/040
B004/B016

TITLE:

Investigation of the Solubility in the System
 $\text{Y}(\text{NO}_3)_3 - \text{NH}_4\text{NO}_3 - \text{H}_2\text{O}$ at 25 and 50°

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 4, pp 960 - 963
(USSR)

ABSTRACT:

The authors refer to the method of the fractional separation of lanthanides used in practice and quote a paper by G. G. Urazov and Z. N. Shevtsova (Ref 4). The purpose of the present paper is to clarify the conditions for the occurrence of the yttrium-ammonium-nitrate double salt. The results obtained according to the solubility method are presented in tables 1, 2 and in Schreinemakers' diagrams in figures 1,2. At 50° the solubility curve shows three branches corresponding to the crystallization of the three salts $\text{Y}(\text{NO}_3)_3 \cdot 4\text{H}_2\text{O}$, $\text{Y}(\text{NO}_3)_3 \cdot 2\text{NH}_4\text{NO}_3$, and NH_4NO_3 . The double salt crystallizes at this temperature in the anhydrous state in the range of the concentrations of NH_4NO_3 from 16 to 44%, and of $\text{Y}(\text{NO}_3)_3$ from 66 - 48%. Its solubility in water amounts to 88% at 50°. At 25° the double salt could not be

Card 1/2

Investigation of the Solubility in the System
 $\text{Y}(\text{NO}_3)_3 - \text{NH}_4\text{NO}_3 - \text{H}_2\text{O}$ at 25 and 50°

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S/078/60/005/04/034/040
B004/B016

obtained, although the diagram shows the corresponding branch. The authors assume that the crystallization of the double salt at this temperature is rendered difficult owing to the high viscosity of the solution. $\text{Y}(\text{NO}_3)_3$ crystallizes in the presence of NH_4NO_3 both at 25° and at 50° with four molecules of crystal water. There are 2 figures, 2 tables, and 6 references, 2 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: January 23, 1959

Card 2/2

86489

52610 1043, 1136, 1273

S/078/60/005/008/022/031/XX
B023/3066

AUTHORS: Zvorykin, A. Ya., Perel'man, F. M., Babiyevskaya, I. Z.,
Fedotova, T. N.

TITLE: Calcium and Iron Germanates

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 8,
pp. 1717-1724

TEXT: The authors investigated systems of sodium germanate and calcium nitrate or iron nitrate in aqueous solutions with different ratios of the components. The formation of calcium metagermanate, $\text{CaO} \cdot \text{GeO}_2 \cdot n\text{H}_2\text{O}$, and three iron germanates, $\text{Fe}_2\text{O}_3 \cdot \text{GeO}_2 \cdot n\text{H}_2\text{O}$, $\text{Fe}_2\text{O}_3 \cdot 2\text{GeO}_2 \cdot n\text{H}_2\text{O}$, and $\text{Fe}_2\text{O}_3 \cdot 3\text{GeO}_2 \cdot n\text{H}_2\text{O}$, was detected by Schreinemakers' method. Thermograms and X-ray diffraction patterns of the compounds mentioned above disclosed characteristic peculiarities and confirmed the chemical homogeneity of the resulting compounds. It was further found that the germanate $\text{Fe}_2\text{O}_3 \cdot \text{GeO}_2 \cdot n\text{H}_2\text{O}$ may be obtained with 15 and 2.5 molecules of hydration water, and that the Card 1/3

Calcium and Iron Germanates

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B023/B066

germanate $\text{Fe}_2\text{O}_3 \cdot 2\text{GeO}_2 \cdot n\text{H}_2\text{O}$ still contains two H_2O molecules after drying at 120°C . All iron germanates were subjected to X-ray phase analysis at the laboratory of V. G. Kuznetsov. Table 1 shows the composition of the liquid phases and of the "residues" in the system $\text{Na}_2\text{GeO}_3\text{-Ca}(\text{NO}_3)_2\text{-H}_2\text{O}$, and Table 2 dto. in the system $\text{Na}_2\text{GeO}_3\text{-Fe}(\text{NO}_3)_3\text{-H}_2\text{O}$. Fig. 1 illustrates the composition of the solid phases in the system $\text{Na}_2\text{GeO}_3\text{-Ca}(\text{NO}_3)_2\text{-H}_2\text{O}$, and Fig. 2 dto. in the system $\text{Na}_2\text{GeO}_3\text{-Fe}(\text{NO}_3)_3\text{-H}_2\text{O}$. V. F. Zhuravlev is mentioned. There are 7 figures, 2 tables, and 10 references: 4 Soviet, 4 German, and 2 US.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

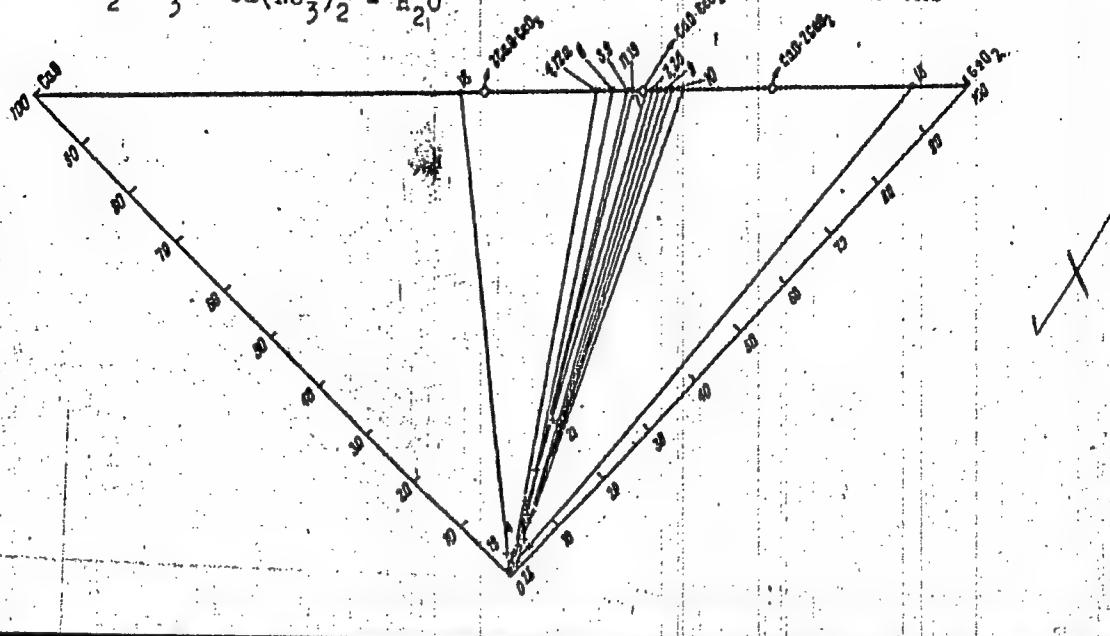
SUBMITTED: March 10, 1959

Card 2/3

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BC23/B066

Legend to Fig. 1: Fig. 1: Composition of the solid phases in the
system $\text{Na}_2\text{GeO}_3 - \text{Ca}(\text{NO}_3)_2 - \text{H}_2\text{O}$



Card 3/3.

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.Ya.; PEREL'MAN, F.M.

Oxidation of cobalt sulfide in the presence of sodium chloride.
Zhur.prikl.khim. 33 no.4:765-768 Ap '60. (MIRA 13:9)
(Cobalt sulfide) (Oxidation)

ZVORYKIN, A. Ya.

Sintering of some sulfates. Zhur.prikl.khim. 33 no.5:1019-1024
My '60. (MIRAI3:7)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova
AN SSSR.

(Sulfates)

31866

S/078/62/007/003/012/019
B110/B138

5.2600

AUTHORS: Perel'man, F. M., Zvorykin, A. Ya., Demina, G. A.

TITLE: The solubility isotherm (25°C) of the system
 $\text{Pr}(\text{NO}_3)_3\text{-RbNO}_3\text{-HNO}_3\text{-H}_2\text{O}$

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 3, 1962, 641 - 644

TEXT: The formation of double nitrates of praseodymium and rubidium in the presence of HNO_3 was examined in a thermostat ($25 \pm 0.1^\circ\text{C}$). Liquid phase samples and residues were taken after the establishment of equilibrium (after 2 - 3 days). Chemically pure $\text{Pr}_{6\text{O}}_{11}$ and Rb_2CO_3 were converted into $\text{Pr}(\text{NO}_3)_3\cdot 6\text{H}_2\text{O}$ ($\text{Pr}_{6\text{O}}_{11}$, 40.96%) and into rubidium nitrate (Rb_2O , 62.66%) by means of HNO_3 . Pr was precipitated by means of NH_4OH , annealed, and weighed as $\text{Pr}_{6\text{O}}_{11}$. Rb was weighed as perchlorate. Five solid phases were formed: (1) $\text{Pr}(\text{NO}_3)_3$; (2) $5\text{RbNO}_3\cdot 4\text{Pr}(\text{NO}_3)_3$; (3) $7\text{RbNO}_3\cdot 5\text{Pr}(\text{NO}_3)_3$; (4) $5\text{RbNO}_3\cdot 2\text{Pr}(\text{NO}_3)_3$; (5) RbNO_3 . The compositions next

Card 1/3

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The solubility isotherm...

to RbNO_3 were examined at 30 - 36%, and those adjoining $\text{Pr}(\text{NO}_3)_3$ at 26 - 30% of HNO_3 . The incongruent double salt $2\text{Pr}(\text{NO}_3)_3 \cdot 5\text{RbNO}_3$ only exists with $\text{Pr}(\text{NO}_3)_3$ concentration less than 10.09%. If the $\text{Pr}(\text{NO}_3)_3$ concentration is increased, $5\text{Pr}(\text{NO}_3)_3 \cdot 7\text{RbNO}_3$ crystallizes. Anhydrous $\text{Pr}(\text{NO}_3)_3$ crystallizes first and next, in the presence of not more than 3 - 4% of RbNO_3 , the double salt $5\text{RbNO}_3 \cdot 4\text{Pr}(\text{NO}_3)_3$. However, only three salts could be synthesized: (1) anhydrous $\text{Pr}(\text{NO}_3)_3$ under the conditions of point 2 (Fig. 1); (2) the anhydrous, bright green, coarse-crystalline double salt $4\text{Pr}(\text{NO}_3)_3 \cdot 5\text{Rb}(\text{NO}_3)_3$ under the conditions of point 6; (3) the anhydrous, light green, fine crystalline double salt $2\text{Pr}(\text{NO}_3)_3 \cdot 5\text{RbNO}_3$ under the conditions of point 18. All three salts decompose at 85 - 90°C with the liberation of dark-brown vapors of oxides of nitrogen. D. I. Mendeleev and N. S. Kurnakov are mentioned. There are 2 figures, 1 table, and 4 references: 3 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: R. C. Vickery,

Card 2/3

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CIA-RDP86-00513R002065720002-7
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PEREL'MAN, F.M.; ZVORYKIN, A.Ya.; GAMZA, L.B.

Degree of polymerization of potassium metaphosphates at various
temperatures. Izv. AN SSSR. Neorg. mat. 1 no.6:900-902 Je '65.
(MIRA 18:8)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"
PEREL'MAN, F.M.; ZVORYKIN, A.Ya.; GAMZA, L.B.

Degree of polymerization of sodium metaphosphate at various temperatures. Izv. AN SSSR. Neorg. mat. 1 no.5:725-729 My '65. (MIRA 1B:10)

1. Institut obshchay i neorganicheskoy khimii imeni Kurnakova AN
SSSR.

Solubility isotherm (25°) in the system $\text{Nd}(\text{NO}_3)_3$ - RbNO_3 - H_2O .
Zhur. neorg. khim. 8 no.7:1753-1755 Jl 63.

(MIRA 16:7)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.

(Neodymium nitrate) (Rubidium nitrate)
(Solubility)

ZVORYKIN, A.Ya.

Some inorganic polymers based on rubidium phosphates. Zhur.neorg.-
khim. 8 no.2:274-277 F '63. (MIRA 16:5)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Rubidium phosphates) (Polymerization)

ZVORYKIN, A.Ia.; RATNIKOVA, V.D.

Solubility isotherm (25°) in the system CsH_2PO_4 — $\text{NH}_4\text{H}_2\text{PO}_4$ — H_2O .
Zhur. neorg. khim. 8 no.4:1018-1019 Ap '63. (MIRA 16:3)

I. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Alkali metal phosphates) (Solubility)

ACCESSION NR: AP3003485

8/0070/63/009/007/1753/1755

AUT: ...; Mel'nikov, I. M.; Evorykin, A. Ya.; Demina, G. A.

TOPIC: Solubility (isotherm) 25° in the system Nd₃(NO₃)₆ - RbNO₃ - H₂O

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 7, 1963, 1753-1755

TOPIC TAGS: solubility, isotherms, RbNO₃, rubidium nitrate, neodymium nitrate, praseodymium nitrate

ABSTRACT: The authors studied the quaternary system Nd(NO₃)₃ sub 3 - RbNO₃ sub 1 - H₂O sub 1 - H₂O at 25° in an interval of 2E-30% NO₃ sub 3 by the method of titration. It was found that two double salts of the composition Nd₃(NO₃)₆ · RbNO₃ · H₂O and Nd₃(NO₃)₆ · 2RbNO₃ · H₂O were formed. The properties of these solid solutions

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"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
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TEREL'MAN, F.M.; ZVORYKIN, A.Ya.; DEMINA, G.A.

Solubility isotherm of the system $\text{Pr}(\text{NO}_3)_3 - \text{RbNO}_3 - \text{H}_2\text{O}$. Zhur.
neorg.khim. 7 no.3:641-644 Mr. 162. (MIRA 15:3)
(Praseodymium nitrate) (Rubidium nitrate)
(Systems (Chemistry))

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
PEREL'MAN, F.M., ZVORIKIN, A.Ya., TARNOVSKY, D.A.

Thio salts of molybdenum and tungsten. Zhur.neorg.khim. 6 no.9:
1999-2002 S '61. (MIRA 14:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
AN SSSR.
(Molybdates) (Tungstates) (Systems (Chemistry))

Solubility isotherm of the system $\text{RbH}_2\text{PO}_4 - \text{H}_2\text{O}$ at 25 . Zhur.neorg.
khim. 6 no.11:2572-2575 '61. (MIRA 14:10)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Rubidium phosphate) (Ammonium phosphate) (Solubility)

ZVORYKIN, A.YA.; PEREL'MAN, F.M.; TARASOV, V.V.

Molybdenum and tungsten sulfides and oxysulfides. Zhur.neorg.khim.
6 no.9:1994-1998 S '61. (MIRA 14:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
Akademii nauk SSSR.
(Molybdenum sulfide) (Oxysulfides)

ZVORYKIN, APPROVED FOR RELEASE: Thursday, September 26, 2002

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APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

Mining Engineering

Outline of the history of Soviet mining engineering. Reviewed by S. Ya. Rackovskiy, S.M. Yasiukevich, G.N. Popov. Gor. zhur. No. 2, 1952

Monthly List of Russian Accessions, Library of Congress, April, 1952 Unclassified

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A. A.

Reconstruction of the coal mining industry. Moskva, Gos. nauch.-tekhn.
gorno-geologo-neftianoe izd-vo, 1934. 236 p. (50-45462)

TN808.R9Z9

APPROVED FOR RELEASE: Thursday, September 26, 2013

APPROVED FOR RELEASE: Thursday, September 26, 2013

ZVORYKIN, A. A.

Engineering Statistics

**Industrial and
Political Re-equipping of the USSR People's Economy
Thirty Years," Prof. A. A. Zverjkin, L. V. Zab-**

四三

Walter L. BROWN No 10

Oct 29 1974

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ZVORYKIN APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
Zvorykin, A. A. and Kirzhner, D. M. "The development of the mining industry of the USSR
and the productivity of its labor", in the collection entitled: Voprosy gornogo dela,
Moscow, 1948, p. 369-85.

SO: U-2888, 12 Feb. 53, (Letopis' Zhurnal 'nykh Statey, No. 2, 1949).

ZVORYKIN, A. A., PROF

USSR/Mining Methods
Efficiency, Industrial

Nov 48

"Methods for Increasing the Productivity of Labor
at USSR Coal Industries," Prof A. A. Zvorykin,
Dr, 3½ pp

"Ugol" No 11 (272)

Discusses causes of stoppages and delays at coal
face. Explains advantages of mechanization.
Quotes figures illustrating percentage of improve-
ment.

14/49r100

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
ZVORYKIN, APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"
Soviet superiority in the most important technical discoveries and inventions.
Moskva. Pravda. 1949. 31 p.

ZVORYKIN, A.

20732. Zvorykin, A. K istorii kizelovskogo kamennougol'nogo basseyna. Voprosy ekonomiki,
1949, No. 5, s. 36-47

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

ZVORYKIN, A

Pervootkryvateli Kamennougol'nykh Basseynov SSSR. (First Discoverers of USSR's
Coal Fields) ... Moskva
(IZD-VO "Pravda") 1950.

31 P.
At head of title: Vsesyuznoye Obshchestvo Po Rasprostraneniyu Politicheskikh
I Nauchnykh Znaniy.
Bibliographical footnotes.

A lecture on discoveries of coal deposits in Russia, listing dates and locations,
as well as names of discoverers. Mentioned is also the beginning of a broad
development of underground coal gasification in the Soviet Union.

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.A.; KIRZNER, D.M.; KUNDIN, M.B.

[Economics, organization and planning in the U.S.S.R. coal industry]
Ekonomika, organizatsiya i planirovaniye ugol'noi promyshlennosti SSSR
Moskva, Ugletekhizdat, 1951. 687 p.
(Mining industry and finance) (Coal mines and mining)
(MLRA 6:8)

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

ZVORYKIN APPROVED

CIA-RDP86-00513R002065720002-7"

The discovery of coal deposits in Russia; the beginning of their development.
Research and documents. Moscow, Ugletekhizdat, 1952. 355 pl maps.
(54-22422)

TN808.R9Z89

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
ZVORYKIN, A.A.; KIRZHEV, D.M.; KUNDIN, M.B.; DOROKHIN, N.G., otvetstvennyy
redaktor; FEYTEL'MAN, N.G., redaktor; CHERENKOV, N.V., redaktor;
ANDREYEV, G.G., tekhnicheskiy redaktor

[Economics of the coal industry of the U.S.S.R.] Ekonomika ugol'noi
promyshlennosti SSSR. Izd. 2-e, perer. i dop. Moskva, Ugletekhizdat,
1954. 427 p. [Microfilm] (MLRA 8:2)
(Coal mines and mining)

ZVORYKIN, Anatoliy Alekseyevich; KIRZHNER, David Mironovich; KUDIN, Mikhail
Borisovich; DOHOKHIN, N.O., otvetstvennyy redaktor; BYTEL'MAN, N.G.,
redaktor izdatel'stva; KOROVENKOVA, Z.A., tekhnicheskii redaktor;
ALADOVA, Ye.I., tekhnicheskii redaktor

[Production organization and planning in the Soviet coal industry]
Organizatsiya i planirovaniye proizvodstva v ugol'noi promyshlennosti
SSSR. Izd. 2-oe, perer. i dop. Moskva, Ugletekhnikdat, 1956. 483 p.
(Coal mines and mining) (MLRA 9:12)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

BERKOVICH, D.M.; ZVOHYKIN, A.A.

Some tendencies in the development of the technology of
modern machine construction. Vop. ist.est. i tekhn. no.1:
168-178 '56. (MILRA 9:10)

(Machinery industry)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.; KIRZHNER, D.

Same problems in the organization of wages in the coal industry.
Sets. trud no.2:67-75 F '56. (MLRA 9:?)
(Coal mines and mining) (Wages)

ZVON

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

BERKOVICH, D.M.; ZVON

Trends in the technological development of the contemporary machine
construction industry. Vop. ist. est. i tekhn. no.2:207-216 '56.
(MIRA 10:1)

(Mechanical engineering) (Machinery--Construction)

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.A.

Periodicity in the history of natural sciences and technology.
Vop. 1st. est. i tekhn. no. 4:153-162 '57. (MIRA 11:1)
(Technology--History) (Natural history) (Dialectical materialism)

2 Veeved, D.M. 119-11-4/7

AUTHORS

Zvorykin, A.A., and Kirzhner, D.M.

TITLE

"How to Determine the Economic Effectiveness of Automation".
(kak opredelyat' ekonomicheskuyu effektivnost' automatizatsii)

PERIODICAL

Priborostroyeniye, 1957
Nr 11, pp. 13-17 (USSR)

ABSTRACT

The most important index of the economic effectiveness of automation is the degree of the increase of work productivity. This effectiveness in the field of work productivity depends on the degree of wage-intensity in an enterprise being automated.

For the determination of the economic effectiveness in the index of work productivity we can carry out the following simple calculations: We call the number of workers in the enterprise

- a) before the introduction of automation in the enterprise h_1 ,
- b) after the introduction of automation h_2 , and we obtain in this case-with all other conditions remaining the same-the increase of work productivity to

CARD 1/4

$$\frac{h_1 - h_2}{h_2} \times 100 \%$$

119-11-4/7

"How to Determine the Economic Effectiveness of Automation".

and a decrease of wage intensity to

$$\frac{h_1 - h_2}{h_1} \times 100 \%$$

As second index for the determination of the effectiveness of automation serves the specific use of capital per production unit. When analysing the amount of this expenditure a certain regularity can be observed. As a rule the capital use per production unit decreases there where it is relatively low, or, where, in consequence of automation the scope of production increases essentially. The more complicated the enterprise is in technical respect and the higher the level of automation and the smaller the increase of production is, the more the capital use per production unit of the annual production will drop.

With the level of capital use also the socalled efficiency-agent of automation is connected, which shows us how much smaller the capital use is for the automation to secure an increase of the capacity of an aggregate or of machine, than the expenditures which

CARD 2/4

119-11-4/7

"How to Determine the Economic Effectiveness of Automation".

are necessary in order to reach such an increase of the capacity of an aggregate or a machine without using automatic devices. There is no reason to regard the coefficient of the efficiency of automation of universal importance. The most important index of the economic efficiency of automation in the USSR is the reduction of the production costs. Usually this effectiveness is characterized by a comparison of the percentage of the reduction of production costs in a non-automated enterprise. This is right, if the economic effectiveness of the same kind of processes and enterprises is considered. The percentage of the reduction of production costs with automation is different if the production costs are calculated with or without the costs of the raw-material. The distribution of the expenditures of the individual departments to the individual products is usually carried out proportionally to the wage of the basic productive workers. In cases of the automation of single processes or departments with a number of industrial branches the same principle was maintained.

CARD 3/4

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"How to Determine the Economic Effectiveness of Automation".

which is used when comparing an automated with a non-automated production. This, however, is obviously incorrect as the real expenditures of departments do not change according to the same relation with automation as do the wages.

When determining the share of the general costs of production per production unit in a non-automated or automated enterprise it is important to regard the demands for the equalization of the quantity of production. Without this the effectiveness of an automated enterprise is artificially increased as in such a case the general costs of production (of the non-automated enterprise) refer to a smaller quantity of production than in an automated enterprise.

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"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.A., prof.; KIRZHNER, D.M.

Progressive engineers and technicians of the U.S.S.R. coal industry.
Ugol' 32 no.11:48-53 N '57. (MIRA 10:12)
(Coal miners) (Coal research)

28(1)

PHASE I BOOK EXPLOITATION SOV/1737

Zvorykin, Anatoliy Alekseyevich, Doctor of Economic Sciences,
Professor

Avtomatizatsiya proizvodstva i yeye ekonomicheskaya effektivnost'
(Automation of Production and Its Economic Efficiency) Moscow,
Izd-vo "Znaniye," 1958. 62 p. (Series: Vsesoyuznoye
obshchestvo po rasprostraneniyu politicheskikh i nauchnykh
znanii. Seriya 3, 1958, nos. 9/10) 66,000 copies printed.

Scientific Ed.: B.S. Sotskov, Doctor of Technical Sciences;
Ed.: T.F. Falaleyeva; Tech Ed.: A.V. Trofimov.

PURPOSE: This pamphlet was prepared by the All-Union Society
for the Dissemination of Political and Scientific Information
and is intended for the general reader interested in auto-
mation.

Card 1/3

Automatization of Production (Cont.)

SOV/1737

COVERAGE: The author of this pamphlet briefly describes the various points of view of foreign specialists on automation. He presents his own views and concepts and reviews the automatization of production processes in the USSR and abroad. Emphasis is placed on the economic aspects of the automatization of production processes. No personalities are mentioned. There are no references.

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Reason for Automatizing Production	5
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Economic Efficiency of Automatization of Production Processes	30
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Card 2/3

Automatization of Production (Cont.)

SOV/1737

Change in the extent of capital expenditures under conditions of automatized production	43
Change in the cost of product under conditions of automatized production	47
Comparison of automatized and nonautomatized production based on the length of time necessary for the recovery of capital outlays	51
Economic efficiency of automatization in relation to its level and applicability to individual branches of production	56

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Card 3/3

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

NEMCHENKO, V.S.; BOCHAROV, M.D.; KRISTOSTUR'YAN, N.G.; CHERKASOV, V.I.;
ANDREYANOV, V.V.; KAUFMAN, V.M.; PAKHMANOV, V.F.; ZVORYKIN, A.A.,
otv.red.; ANICHKOV, N.N., red.; BARDIN, I.P., red.; BLAGOVISHCHENOV,
A.A., red.; VVEDENSKIY, B.A., red.; GRIGOR'YEV, A.A., red.;
KAPUSTINSKIY, A.F., red.; KOLMOGOROV, A.N., red.; MIKHAYLOV, A.A.,
red.; OPARIN, A.I., red.; PETROV, F.N., red.; STOLNTOV, V.N., red.;
STRAKHOV, N.M., red.; FIGUROVSKIY, N.A., red.; KOSTI, S.D., tekhn.red.

[Biographical dictionary of leaders in the natural sciences and
technology] Biograficheskii slovar' deiatelei estestvoznanija
i tekhniki. Vol.1. A - L. Otvetstvennyi red. A.A.Zvorykin. Red.
kollegija: N.N.Anichkov i dr. Moskva,.Gos.nauchn.izd-vo "Bol'shaja"
Sovetskaja Entsiklopedija. * 1958. 548 p. (MIRA 12:4)

1. Redaktsiya istorii estestvoznanija i tekhniki Bol'shoy Sovetskoy
Entsiklopedii (for Nemchenko, Bocharov, Kristostur'yan, Cherkasov,
Andreyanov, Kaufman, Pakhmanov).

(Scientists)

ZVORYKIN, A.A.

25-2-1/43

AUTHOR: Zvorykin, A.A., Doctor of Economical Sciences, Professor, and
Shukhardin, S.V., Candidate of Technical Sciences

TITLE: Force of Scientific Foresight (Sila nauchnogo predvideniya).
Karl Marx in Technical Progress (Karl Marks o progresse
tekhniki)

PERIODICAL: Nauka i Zhizn', 1958, # 2, p 1-6 (USSR)

ABSTRACT: A brief review of advances made in the scientific and technical fields during the last few decades. There is one sketch and one diagram.

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

ZVORKIN, A.A., prof.; KIRZHNIK, D.M., prof.

Basic problems of mining engineering theory and practice. Izv.
vys.ucheb.zav.; gor.zhur. no.3:3-11 '58. (MIRA 12:8)
(Mining engineering)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.A., prof.; KIRZHNER, D.M.; prof.

Methods of determining the economic efficiency of automatization
in the coal industry. Nauch.dokl.vys.shkoly; gor.delo. no.4:
259-266 '58. (MIRA 12:1)

1. Predstavleno kafedroy ekonomiki, organizatsii i planirovaniya
gornykh predpriyatiy Moskovskogo gornogo instituta imeni I.V.
Stalina.

(Coal mines and mining--Costs)
(Automatic control)

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

ZVORYKIN, Anatoliy Alekseyevich; ZHUK, I., red.; ULANOVA, L.,
tekhn.red.

[Creating material and technological basis of communism
in the U.S.S.R.] Sozdanie material'no-tehnicheskoi bazy
kommunizma v SSSR. Moskva, Izd-vo sots.-ekon.lit-ry,
1959. 102 p.

(MIRA 12:8)

(Technology)

ZVORYKIN, A.A., otv.red.; NEMCHENKO, V.S., zaveduyushchiy red.;
BUCHAROV, M.D., starshiy nauchnyy red.; KRISTOSTUR'YAN,
H.G., starshiy nauchnyy red.; CHMIRKASOV, V.I., starshiy
nauchnyy red.; ANDREYANOV, V.V., red.; GARKOVSKO, R.V.,
nauchnyy red.; KAUFMAN, V.M., mladshiy red.; PAKHMANOV,
V.F., mladshiy red.; KOSTI, S.D., tekhn.red.

[Biographical dictionary of figures in the natural sciences
and technology] Biograficheskii slovar' deiatel'stvi estestvo-
znaniiia i tekhniki. Otvetstvennyi red. A.A.Zvorykin. Red.
kollegiia: N.N.Anichkov i dr. Moskva, Gos.nauchn.izd-vo
"Bol'shia sovetskaia entsiklopediia." Vol.2. M - IA.
1959. 467 p.

(MIRA 12:7)

1. Redaktsiya istorii estestvoznaniiia i tekhniki Bol'shoi
Sovetskoy Entsiklopedii (for all except Zvorykin, Kosti).
(Scientists) (Technology--Biography)

ZVORYKIN, Anatoliy Alekseyevich, doktor ekonom.nauk; DUBROVSKIY, Yu.N.,
red.; ATROSHCHENKO, L.Ye., tekhn.red.

[Economic efficiency of production automation] Ekonomicheskaisa
effektivnost' avtomatizatsii proizvodstva. Moskva, Izd-vo
"Znanie," 1960. 45 p. (Vsesoiuznoe obshchestvo po rasprostraneniu
politicheskikh i nauchnykh znanii. Ser.3, Ekonomika, no.34).

(MIRA 13:12)

(Automation) (Labor productivity)
(Costs, Industrial)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

ZVORYKIN, Anatoliy Alekseyevich, prof.; KIRZHNER, David Mironovich;
KUNDIN, Mikhail-Borisovich, inzh.; RACHKOVSKIY, S.Ya., prof., otv.
red.; ASTAKHOV, A.S., kand. ekonom. nauk, otv. red.; GOLUBYATNIKOVA,
G.S., red. izd-va; PROZOROVSKAYA, V.L., tekhn. red.

[Economics of the mining industry] Ekonomika gornoj promyshlennosti.
Izd.3., perer., dop. Moskva, Gos. nauchno-tekh. izd-vo lit-ry po
gornomu delu, 1961. 439 p. (MIRA 14:9)
(Mineral industries)

Zvorykin, Anatoliy Alekseyvich

Ekonomika gornoj promyshlennosti [by] A.A. Zvorykin,
D.M. Kirzhner [i] M.B. Kundin. Izd. 3., perer. dop.
Moskva, Gosgortekhizdat, 1961.
439 p. tables.
Bibliography: p. 432-433.

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

Automation of capitalist production is a disaster for the workers.
Sots. trud 6 no.5:30-40 My '61. (MIRA 14:6)
(Automation--Economic aspects)
(Labor and laboring classes)

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7"

"Opredeleniye kul'tury i mestmaterial'noy kul'tury v obshchey kul'ture."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences,
Moscow, 3-10 Aug 64.

ZVORYKIN, A. A.

Ekonomika ugol'noy promyshlennosti SSSR (by) A.A. Zvorykin, D. M. Kundin. I zd. 2, perer I dop. Moskva, Ugletehizdat, 1954.
427 p. tables. 23 cm. Bibliography: p. (425)

Zvorykin, A. A.

Ekonomika ugol'noy promyshlennosti SSR (by) A.A. Zvorykin, D.M. Kirzhner i
M.B. Kundin. Izd. 2, perer 1 dop. Moscow, Ugletekhizdat, 1954.

427 p. tables. 23 cm.

Bibliography: p. (425)

ZVORYKIN, A.A.; MILONOV, Yu.K., otv. red.

[History of technology] Istoryia tekhniki. Moskva, Izd-vo
sots.-ekon.lit-ry, 1962. 772 p. (MIRA 16:9)
(Technology)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

CHERNY SHEV, Vladimir Ivanovich; ZVORYKIN, A.A., otv. red.; KLESHCHEINOV,
M.A., red. izd-va; POLYAKOVA, T.V., tekhn. red.; GOLUB', S.P.,
tekhn. red.

[From the history of technical development in the first years
of the Soviet regime, 1917-1927] Iz istorii razvitiia tekhniki
v pervye gody sovetskoi vlasti, 1917-1927. Moskva, Izd-vo
Akad.nauk SSSR, 1962. 316 p. (MIRA 15:7)
(Industrialization) (Economic development)

ZVORYKIN, A.A., doktor ekon.nauk,prof.; OS'MOVA, N.I., nauchnyy
sotr.; CHERNYSHEV, V.I., kand.tekhn.nauk; SHUKHARDIN,S.V.,
kand.tekhn.nauk; MILONOV, Yu.K., kand.ekon.nauk,otv.red.;
BAKOVETSKIY,O., red.; STREPETOVA, M., mladshiy red.;
MOSKVINA, R., tekhn. red.

[History of technology]Istoriia tekhniki. [By] A.A.Zvorykin i
dr. Moskva, Sotskgiz, 1962. 772 p. (MIRA 15:8)

1. Akademiya nauk SSSR. Institut istorii yestestvoznaniya i
tekhniki.

(Technology)

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CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

SHUHARDIN, S.V.; ZVORYKIN, A.A., redakter; NEMCHENKO, B.C., redakter;
ZELINKOVA, Ye.V., tekhnicheskiy redakter.

[Georg Agricola] Georgii Agrikola. Moskva, Izd-vo Akademii nauk
SSSR, 1955. 205 p.
(MLRA 9:5)
(Agricola, Georg, 1494-1555)

BROMBERG, Viktor Aleksandrovich; GAMAYUNOV, Nikolay Ivanovich;
ZVORYKIN, Aleksey Dmitriyevich; KUDRYAVTSEV, Vitaliy
Vasil'yevich; TEVEROVSKIY, Yevgeniy Ivanovich; EPSHTEYN,
Lev Abramovich; SHIROKOVA, M.M., tekhn. red.

[Mechanization of the manufacture of electrical insulating
materials of winding insulation, and drying as well as
saturating operations] Mekhanizatsiya proizvodstva elektro-
izoliatsionnykh materialov, izoliatsionno-obmotochnykh i
sushil'no-propitochnykh rabot. By V.A.Bromberg i dr. Moskva,
Gos. energ.izd-vo, 1961. 99 p. (MIRA 15:2)
(Electric insulators and insulation)

Protecting magnesia cement objects from humidity. A. V. Zvorkinje. *Bull. Inst. politek. Irano-Venizelsk* 13, 201-4 (in German 200-7) (1930).—8 describes tests on different plates which were made from magnesia cement treated with varnish (boiled linseed oil) to ascertain the penetration of humidity into these objects. The tests are tabulated and show that plates std. with varnish are fairly well protected against humidity.

A. V. Kostomy

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

160389 74

160389 419 000 JRC

0111101

0111101

0111101

BC

B-7-3

Preparation of chlorine derivatives of phosphorus from phosphates. A. J. Zvyagutin (J. Appl. Chem. Russ., 1955, 8, 1360-1367). A mixture of air and Cl₂ is passed through an intimate mixture of finely powdered phosphate and C at 700-1000°; the yields of PCl₃ according to Ca₃(PO₄)₂ + 6Cl₂ + 10 = 3CaCl₂ + 2PCl₃ + 4CO₂ increase with rising temp., amount of C, [Cl₂] and fineness of division of the substrates. R.T.

AIA-31A METALLURGICAL LITERATURE CLASSIFICATION

EDITION 379, APRIL 1970

STANDARD 34

1 APPROVED FOR RELEASE: Thursday, September 16, 2002 CIA-RDP86-00513R002065720002-7-1
1 APPROVED FOR RELEASE: Thursday, September 16, 2002 CIA-RDP86-00513R002065720002-7-1

Apparatus for the conversion of yellow into red phosphorus. A. V. Zverkin. Russ. 46,100, May 31, 1900. Molten yellow P is carried off by an inert gas and passed through molten, high-melting substances. Construction details are given.

ca

18

ASSISTANT METALLURGICAL LITERATURE CLASSIFICATION

EDM 111103Z MAR 65
EDM 111103Z MAR 65
EDM 111103Z MAR 65
EDM 111103Z MAR 65

Decomposition of sulfates with chlorine. A. Vn. Zverubin, J. Applied Chem. (U.S.S.R.) 9, 1-8(1930); C. A. 30, 13081.---Finely ground Cu, Ba, Sr and Na sulfates were heated at 850-1100° in an elec. muffle furnace in a stream of Cl₂. Under identical conditions at 1050° the yields of CaCl₂, BaCl₂ and NaCl were 42.62, 10.2 and 78.0% theoretical. Lengthening the reaction time and increase in quantity of Cl₂ and temperature the yield. Addn. of NaCl (about 5%) to sulfates is beneficial but SiO₂ has an unfavorable effect. Cl₂ is also effective but interferes with purification of products. V. A. K.

APPENDIX METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Dynamite of preparation of red phosphorus.
I. A. J. ZYKOVICH (J. Appl. Chem. Russ., 1936, 9, 778-785).—Complete conversion of white into red P is attained in 15–30 min. at 400–500°. Red P, $\text{Fe}_2(\text{O}_4)_3$, SiO_2 , U_3O_8 , and Se are without catalytic action.

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ASA-SEA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS WORKED										IRON GATES									
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ca

Dynamics of red phosphorus production. I. A. Ya.
Lavrent'ev. *J. Applied Chem.* (U.S.S.R.), 17(1944), 1711-1716
(BIBLIOGRAPHY 11 REFERENCES).—A lab. expt. on the production of
red P are described. Yellow P₂ with and without the
addins. of catalysts, was charged into a glass stoppered
ampoule and the stopper was tightly sealed with a solnt.
of Na₂SiO₃ and CaO. The ampoule, inserted into a solnt.
glass tube, was submerged into sand and heated by an
elec. furnace at 220-300° for various periods of time. To
det. the degree of allotrophic conversion, the reaction am-
poule was crushed, the contents were treated with C₆H₆,
the red P was filtered off by suction through a Schott porous
filter and the filter, after drying in the air and at 10° in a
drying oven, was weighed. The rate of the allotrophic
conversion is a function of time and temp. Heating yellow
P at 230-240° for 3-47 hrs. resulted in a product contg.
16.9-93% red P. Heating at 330-500° for 18-25 hrs.
yielded a minit. with 71.0-76% red P. A 100% conversion
was effected at 400° and 500° in 1 hr. to 1 hr. and 20 min.
The addins. of red P, silica gel, Fe, FeCl₃, Se, U₃O₈ and
CaO failed to catalyze the reaction. Increasing time and
temp. increased the hardness of the red P and the inten-
sity of its coloration from a bright red to a deep slate
Chas. Blaine

Chau, Winnie

METALLURGICAL LITERATURE CLASSIFICATION											
ECONOMIC INDUSTRIAL											
TECHNICAL											
IRON AND STEEL	1	2	3	4	5	6	7	8	9	10	11
& ALLOYS	12	13	14	15	16	17	18	19	20	21	22
& METALS	23	24	25	26	27	28	29	30	31	32	33
& MINERALS	34	35	36	37	38	39	40	41	42	43	44
& EQUIPMENT	45	46	47	48	49	50	51	52	53	54	55
& PROCESS	56	57	58	59	60	61	62	63	64	65	66
& METHODS	67	68	69	70	71	72	73	74	75	76	77
& TESTS	78	79	80	81	82	83	84	85	86	87	88
& ANALYSIS	89	90	91	92	93	94	95	96	97	98	99
& PROBLEMS	100	101	102	103	104	105	106	107	108	109	110

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B C

8-1

Quaternary system $K_2O-NH_4-PO_4-H_2O$. Solid solutions in the system $K_2HPO_4-NH_4H_2PO_4-H_2O$. N. S. Донниковская and A. J. Кирин (Kali, 1937, No. 2, 34-24).—The 20° and 50° isotherms have been determined. The results of Askenasy and Neuner (A., 1930, 872) indicating the existence of a continuous series of solid solutions have been confirmed. D. G.

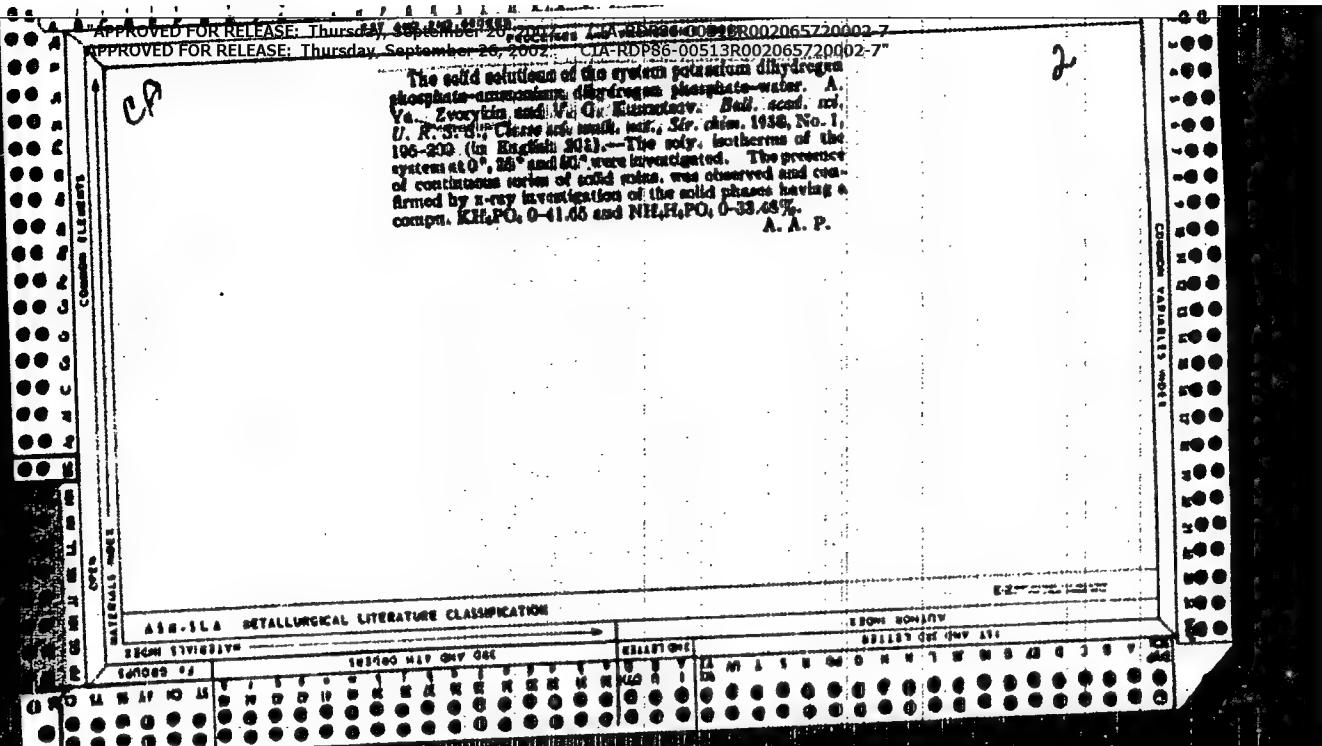
D. G.

ASA-SEA METALLURGICAL LITERATURE CLASSIFICATION												ASA-SEA METALLURGICAL LITERATURE CLASSIFICATION																	
ECONOMIC STUDIES												TECHNICAL PAPERS																	
1940-1949						1950-1959						1960-1969						1970-1979						1980-1989					
1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	6	
X	U	N	A	V	H	A	S	W	H	D	P	W	H	M	R	W	W	H	A	M	S	W	W	H	M	R	W	W	

"APPROVED FOR RELEASE: Thursday, September 26, 2002." CIA-RDP86-00513R002065720002-7

The solid solutions of the system potassium dihydrogen phosphate-urea, dihydrogen phosphate-water. A. V. Zverikin and V. I. Eremeev. *Bull. Acad. sci. U. R. S.S.R., Classe des sciences, math., Sci. chim.* 1938, No. 1, 106-210. (In English, *Moscow*.)—The only isotherms of the system at 20°, 30° and 40° were investigated. The presence of coexisting series of solid phases was observed and confirmed by x-ray investigation of the solid phases having a compn. $K_2HPO_4 \cdot 0.41H_2O$ and $NH_4H_2PO_4 \cdot 0.33H_2O$.
A. A. P.

A. A. P.



Gypsum problem in the Soviet Union. N. I. Bulyalov
and A. Ya. Zvezkin. *Ann. sectors and phys. Chem.*
1967, *Issue 1*, p. 11, 327-330 (1968). A review of the results of a geological survey in the Western Kazakhstan with a discovery of some 300 complex salt domes and large veins of gypsum and anhydrite with recommendations for the investigation of the geochemical and petrographic properties and economic exploitation of the deposits in the light of American practice with similar deposits in Texas and Louisiana. Chas. Blane

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

ISDN: 519103174

1936A3 MFP OMY ONE

CZT 172-2002-1

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1400282-94

Chemical literature

Geology

Notes

Geology

"APPROVED FOR RELEASE! Thursday, September 26, 2002" CIA-RDP86-051R02065720002-7
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アラビア語を学ぶための参考書と問題集

10

Fertilizers. A. Ya. Zyorykin, Russ. 56,025, Nov. 30, 1939. Soils, contg. 35-6% ammonium phosphate are treated with a 2-18% soln. of KCl at temps. of -5 to +65°.

AM-SEA RETAILER'S LITERATURE CLASSIFICATION

140000-149999										150000-159999									
140000-149999					150000-159999					140000-149999					150000-159999				
140000	140001	140002	140003	140004	150000	150001	150002	150003	150004	140000	140001	140002	140003	140004	150000	150001	150002	150003	150004
140000	140001	140002	140003	140004	150000	150001	150002	150003	150004	140000	140001	140002	140003	140004	150000	150001	150002	150003	150004

Ca.
Fertilizer. A. Ya. Zvorykin. Russ. 55,840, Oct. 31,
1930. Polyhalite freed of NaCl, treated with dil.
H₂PtCl₆, and with NH₄ salts, freed of gypsum and evapd.
to dryness.

ASB-LSA METALLURGICAL LITERATURE CLASSIFICATION

1000 10000 100	10000 1000 100	100000 10000 1000	1000000 100000 10000	10000000 1000000 100000
0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0

28

CA

The heating curves of carbohydrates. A. Ya. Zvorykin and A. L. Sokolovskii. *J. Applied Chem. (U.S.S.R.)* 12, 1430 (1939).—A preliminary report concerning the heating curves of sucrose, dextrose, levulose, caramel, a mixt. of invert sugar and sugar and sugar-molasses must is given. Each curve had 3 transformation periods as shown by the endothermic effects. The identification of the transformation products will be done in the near future.
A. A. Podgorny

ASA-31A METALLURGICAL LITERATURE CLASSIFICATION

FROM DIVISION

TO ONE DIVISION

TO ALL ONE DIVISION

TO ALL DIVISIONS

Concentrated fertilizers containing phosphorus, potassium, ammonia and magnesium from polyhalite. A. V. Zver'ykin and V. Ya. Keknich. *Comp. rend. acad. sci. U.S.S.R.* 3, 27, 464-5 (1940) (in English).—Utilization of polyhalite ($K_2SO_4 \cdot MgSO_4 \cdot 2CaSO_4 \cdot 2H_2O$) is a most urgent problem, where large deposits are indicated in several districts of Western Kazakhstan and the Middle Volga. K. and Z. state that the industrial conversion of the American polyhalite into K_2SO_4 as suggested in the literature and in patents is extremely complicated and does not appear remunerative inasmuch as its ultimate product is a very weak K_2SO_4 soln. whose evapn. is hardly profitable. In view of the fact that many crops cultivated in their country, as tobacco, citrus plants or flax are in need of Cl-free fertilizers contg. K, NH₃, Mg and phosphate, the authors treated polyhalite with com., H_2PO_4 and salted. the liquid mass with NH₃; products of the following percentage compn. were obtained: Water-sol. fraction NH₃ 17.20, P₂O₅ 20.80, CaO 0.48, MgO 0.37, K₂O 4.81, sulfate 15.93; salt compn. $(NH_4)_2HPO_4$ 43.68, K_2HPO_4 8.37, $CaSO_4$ 1.17, $MgSO_4$ 1.13, $(NH_4)_2SO_4$ 19.56 and water-insol. residue 24.97. After soln. in 20% HCl: NH₃ 18.05, P₂O₅ 35.79, CaO 0.01, MgO 1.27, K₂O 5.15, sulfate 19.94, residue insol. in HCl 0.50; salt compn. $(NH_4)_2HPO_4$ 30.37, K_2HPO_4 9.53, $CaSO_4$ 14.64, $(NH_4)_2SO_4$ 10.45, $MgSO_4$ 3.79, residue insol. in HCl 0.60. In order to lower the content of water-insol. fraction, the polyhalite was mixed with dild. com. H_2PO_4 and the liquid fraction sep'd. from the insol. fraction by filtration. The filtrate was then salted. with NH₃ and both liquid and insol. salt fractions were analyzed. Water-sol. fraction percentage compn. was: NH₃ 13.82, P₂O₅ 49.89, K₂O 3.10, sulfate 6.48, water-insol. residue 9.22; salt compn., KH_2PO_4 8.06, $NH_4H_2PO_4$

73.27, $(NH_4)_2SO_4$ 8.01 and water-insol. residue 0.22. After soln. in 20% HCl: NH₃ 14.41, P₂O₅ 54.25, MgO 0.44, K₂O 4.08, sulfate 0.71, residue insol. in HCl 0.00; salt compn. KH_2PO_4 11.59, $NH_4H_2PO_4$ 77.93, $(NH_4)_2SO_4$ 0.23, $MgSO_4$ 1.31 and residue insol. in HCl 0.00. The above data favor the manuf. of concn. fertilizers from polyhalite according to the method patented by Z. (Russ. pat. 25,810, C. A. 34, 3008). Further work on the phys. and chem. properties of the product with reference to its utilization in agriculture and to its equil. diagram is in progress.

W. A. Cook

APPROVED FOR RELEASE: Thursday, September 26, 2002 CEA-RDPB6-00513R001065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CEA-RDPB6-00513R001065720002-7

APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CA

18

The relation between the degree of conversion of sulfur in the oxidation of sulfides and the changes in the solid and the gaseous phase. A. V. Zvereva, I. M. Nek S.S.R., Refinary, Odz. Khim. Nauk 1945, 31.—The degree of conversion Z (%) of S into SO_2 on roasting can be determined indirectly from the amt. δ of SO_2 (in g.) in the gas and the increase of wt. α of the sample, by $Z = 137.0 (\delta + 2.3 \alpha)/\alpha m$ where α = initial wt., $m = 1$, sulfate in the sample. N. Thun

APPENDIX - METALLURGICAL SUPPORTIVE EVIDENCE

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2

Application of physicochemical analysis to the study of complex catalysts. The activity of the oxides of cobalt, nickel, and copper in the decomposition of hydrogen peroxide. A. Yu. Averykin and F. M. Perel'man. *J. Phys. Chem. (U.S.S.R.)* 20, 1093-1101 (1946) (in Russian).

The reaction const. of the decompos. of H_2O_2 in the presence of equimol. amts. of CuO , a Co oxide, and NiO were in the ratio 0.013:1.21:0.020. Among the many binary and ternary mixts. of these oxides only those contg. about 80 at.% of Co and 20% of Ni or about 80% of Co, 15% of Ni, and 5% of Cu were considerably more active than the Co oxide; in their presence the reaction const. reached 1.40.

J. J. Bikerman

AMERICA METALLURGICAL LITERATURE CLASSIFICATION

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ZVORTZIN, A. 1947
"Concerning the Reactions of Oxides and Salts in Solid State." Sub 29 Sep 47,
Moscow Inst of Fine Chemical Technology imeni M. V. Lomonosov

Dissertations presented for degrees in science and engineering in Moscow in
1947

SO: Sum No. 457, 18 Apr 55

APPROVED FOR RELEASE: Thursday, September 26, 2002

APPROVED FOR RELEASE: Thursday, September 26, 2002

The hydrides occurring in the gel and dissociation of their gels. Metal chlorides were added to the hydrides to settle, and its vol. observed. This procedure was repeated over a number of days. As the ppt. aged, its vol. contracted. Immediately after shaking, the contraction was rapid and after approx. 15-15 min. it leveled off. The results of the observations were plotted, with time in min. on the abscissa and vol. in cc. on the ordinate. A tangent drawn from the point where the curve leveled off (15-15 min.) and extended to the ordinate gave the vol. assumed to be the max. that would be reached by the ppt. immediately after shaking if it were uniformly dissolved and if it were not acted upon by gravity. This vol. decreased as the hydride aged and it was different for different hydrides. The ratio of the vol. assumed by a hydride when it settles freely in a water-filled cylinder and the real vol. of the same hydride is referred to as the "active vol." Each of the hydrides had its own active vol., which diminished with age. Plotting $\log \frac{v}{v_0}$ (where v = abscissa and v_0 = vol.) as ordinate gave a series of straight lines representing the change of the active vol. with time. From these curves it can be seen that the stability of hydrides decreases in the order Mn, Fe, Ni, Co, and Cu. The results were tested on mixed Co and Cu hydride catalysts. The activity of these catalysts was parallel to changes in their hydrides.

M. Knob

APPENDIX METALLURGICAL LITERATURE CLASSIFICATIONS

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2

Solid solutions of potassium and ammonium phosphates. N. S. Romanov, A. V. Zverev, and V. Ya. Kachalov. Izvest. Akad. Nauk SSSR, No. 3, 108-110 (1948).—The purpose was to ascertain the optimum conditions for producing $\text{NH}_4\text{H}_2\text{PO}_4$ to be used as a cement fertilizer. In this work was investigated the quaternary system $\text{KH}_2\text{PO}_4 + \text{KCl} \rightleftharpoons \text{K}_2\text{HPO}_4 + \text{NH}_4\text{Cl}$ at 20°. To this end were studied $\text{KH}_2\text{PO}_4 + \text{NH}_4\text{H}_2\text{PO}_4 + \text{H}_2\text{O}$, $\text{KCl} + \text{KCl} + \text{H}_2\text{O}$, $\text{KCl} + \text{NH}_4\text{Cl} + \text{H}_2\text{O}$, and $\text{NH}_4\text{Cl} + \text{NH}_4\text{H}_2\text{PO}_4 + \text{H}_2\text{O}$. The results were plotted in the form of a phase diagram projected on the plane $\text{KCl}-\text{NH}_4\text{Cl}$. Next were used the solv. of KCl and NH_4Cl in mol. ratios of $(\text{NH}_4)_2\text{PO}_4$ at various concns. of NH_4 at 20 and 0°. The results are tabulated. The phase diagrams indicated a simple and effective process for the production of $\text{NH}_4\text{H}_2\text{PO}_4$ - $\text{NH}_4\text{H}_2\text{PO}_4$ consisting of passing NH_4 into a soln. of KCl , H_2O , and KCl . The solid phase was separated in a centrifuge. In this step 80-90% of the used P_2O_5 is used up. The mother liquor contg. the balance of H_2O is treated with NH_4 , thereby prodg. $(\text{NH}_4)_2\text{PO}_4$. This gives off NH_3 , leaving $(\text{NH}_4)_2\text{HPO}_4$. In these 2 steps 80-90% of the P_2O_5 is utilized. The 2nd mother liquor can be treated to yield $\text{KCl}, \text{NH}_4\text{Cl}$, or, if desired, glasiterite. M. Hoshik.

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APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

32537. ZVORYKIN, A. Ya i TIMKHEVA, N. I. Spektris solej i okislov. Zhurnal prikl. khimii, 1949, No 10, s. 1063-67

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

Irregular multidimensional figures in physicochemical analysis. F. M. Perel'man and A. Ya. Zvorykin (N. S. Kurnakov Inst. of Gen. and Inorg. Chem., Acad. Sci. U.S.S.R.). Izv. Sektora Fiz.-Khim. Anal. Inst. Otsch. Akad. Nauk. Khim., Akad. Nauk S.S.R. 19, 144-50 (1949).—The use of multidimensional diagrams for presentation of the compn. and properties of complex systems is discussed. The geometry of such figures is analyzed. M. Hoshi.

C

Sintering of salts and oxides. A. V. ZALMYKIN AND N. I. TIMOKHINA. *J. Applied Chem. (USSR)*, 22 [10] 1033-07 (1949).—Powders of CaF_2 were fired in a porcelain crucible at 400°, 500°, 600°, and 700°C., while powders of SiO_2 , CaCO_3 , and Fe_2O_3 were fired at temperatures from about 600° to 1100°. The compressive strength of the sintered shapes was determined under a constantly increasing load. Curves of strength vs. temperature indicate that strength of sintering is a characteristic of the solid material and reflects the changes occurring during the various temperature intervals. Experimental results support the following mechanism of sintering: Sintering is above all a diffusion of particles in the solid material; the mobility of particles and diffusion increase with rising temperature. The individual particles make contact in some places only, so that at first diffusion takes place gradually at these points of contact. In determining the strength of sintering, destruction takes place chiefly at these points of diffusion because here the particles are bound to one another less strongly than in the originally crystalline material. As a result of the crushing of the shape, the graining of the material changes and, in addition to the original grains, larger and smaller grains are also obtained. R.Z.K.

ASA-11A METALLURGICAL LITERATURE CLASSIFICATION										GENERAL INDEX									
SUBJ. SUBJECT					1930-83 MRP ONLY ODS					1930-83 MRP ONLY ODS					1930-83 MRP ONLY ODS				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

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"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

Sintering of carbonates. A. Ya. Zvorykin, Zhur. Pribor. Khim. 24, 1131-5 (1981). Chlorides of Li, Na, Be, Mg, Ca, Sr, Cd, and Ba were subjected to temps. between 100 and 1000°. As was proved for chlorides (C.A. 44, 8627) the change of mech. strength on sintering depends on the energy of crystal lattices. For energy computation a formula by Kapustinskij was used. $U = 287.5 \left[\frac{Z_1 Z_2}{r_1 + r_2} \right] \left(1 - \frac{0.345}{r_1 + r_2} \right)$, where $r_1 + r_2$ = sum of ionic radii, Z_1 = no. of ions, and Z_1 and Z_2 = valencies of ions. S. Strelcov

ZVORYKIN, A.Ya.; PEREL'MAN, F.M.

Solubility isotherm 25° of the system $(\text{NH}_4)_2\text{MoO}_4 - (\text{NH}_4)_2\text{SO}_4 - \text{H}_2\text{O}$.
Khim.redk.elem. no.1:52-57 '54. (MLRA 8:3)

1. Institut obshchey i neorganicheskoy khimii im.N.S.Kurnakova
AN SSSR.

(Solubility) (Ammonium salts)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.Ya., kandidat khimicheskikh nauk.

New concentrated non-chlorinated fertilizer. Vest. AN SSSR 24
no.3:64-66 Mr '54. (MLRA 7:3)
(Fertilizers and manures)

ZVORYKIN, O.Ye.; STEPANOV, I.S., inshener,
ZELIKMAN, A.N.; SAMSONOV, G.V.; KREYN, O.Ye.; STEPANOV, I.S., inshener,
retsenzent; TAHAYEV, I.V., retsenzent; POGODIN, S.A., professor,
doktor, zasluzhennyy deyatel' nauki i tekhniki, retsenzent; RODE,
Ye.Ye., professor, doktor, retsenzent; ABRIKOSOV, N.N., doktor
khimicheskikh nauk, retsenzent; SHAMRAY, F.I., doktor khimicheskikh
nauk, retsenzent; MOROZOV, I.S., kandidat khimicheskikh nauk,
retsenzent; BOOM, Ye.A., kandidat khimicheskikh nauk, retsenzent;
NIKOLAEV, N.S., kandidat khimicheskikh nauk, retsenzent; ZVORYKIN,
A.Ya., kandidat khimicheskikh nauk, retsenzent; BASHILOVA, N.I.,
kandidat khimicheskikh nauk, retsenzent; VYSOTSKAYA, V.N., redaktor;
KAMAYEVA, O.M., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor

[Metallurgy of rare metals] Metallurgija redkikh metallov. Moskva,
Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii.
1954. 414 p. (MLRA 7:9)

1. Chlen-korrespondent Akademii nauk SSSR (for Tananayev)
(Metals, Rare--Metallurgy)

~~SECRET~~
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R00200657Z/20002-Z
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R00200657Z/20002-Z

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-Q0513R002065720002-7
APPROVED FOR RELEASE: 2006 YEAR CIA-RDP86-Q0513R002065720002-7
NIKOLAEV, N.S.,
doktor khimicheskikh nauk, nauchnyy redaktor; GOLUBKOVA, V.A.,
redaktor; YUSFINA, N.L., tekhnicheskiy redaktor

[How chemistry originated and with what it is concerned] Kak
voznikla khimiia i chem ona zanimetsia. Moskva, Goskul'tpro-
svetizdat, 1956. 14 p. and 5 l. (MLRA 10:2)
(Chemistry--History)

Physicochemical principles in the production of a new form of chlorine-free concentrated fertilizers. Zhur.neorg.khim. 1 no. 7:1523-1532 J1 '56. (MLRA 9:11)

(Phosphates)

5(8) TABLE I BOOK REPORTS 507/252

Akademika i doktorov. Institut obshchey i neorganicheskoy khimii.

Rabochiye polucheniya, 1971, 1 (Chemistry of Rare Elements, No. 5) Moscow, Izd-vo Akad. Nauk, 1971. 155 p. 4,500 copies printed. Printed slip inserted.

No. of Participants: 10; No. of Authors: 10; No. of Editors: 10.

Editorial Board: I. V. Tsvetkov (Chairman), S. A. Pogodin, Ye. Ya.

Mil'shtein, V. G. Trotsik, and O. P. Bogach (Secretary).

PURPOSE: The book is intended for scientists and engineers concerned with the

study and utilization of rare elements.

CONTENTS: The book is a collection of papers on fundamental issues in the chemistry of rare elements conducted at the Institute of General and Inorganic Chemistry, Leningrad, I. V. Tsvetkov (Chairman of General and Inorganic Chemistry Board, I. S. Bursakov). No generalities are mentioned, there are 215 references, 27 figures, 32 tables, 12 English, 11 German, 15 French, 4 Italian, and 1 Japanese.

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the System Lithium Carbonate-Lithium Chloroaluminate at 30°C 3

Burakov, A. Ye. and I. P. Burovskaya. Vapor Pressure of Saturated

Solutions in the System $(\text{Na}_2\text{CO}_3 - \text{LiCl}) - \text{H}_2\text{O}$ 6

Bogach, O. V., V. B. Mal'zev, V. Ye. Tsvetkov, and Ye. I. Chizhik.

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and its Physiological Significance 10

Levina, I. Ye. and N. V. Smirnov. Galium Ferrocyanide and Their

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Levina, I. Ye. and I. V. Smirnov. Investigation of the Interaction of Gallium

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Levina, I. Ye. and I. V. Smirnov. Investigation of the Reaction of

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the Properties of the Compound $\text{Ga}_2(\text{OH})_6\text{Cl}_2 \cdot 2\text{H}_2\text{O}$ 13

Levina, I. Ye. The Current Method of Determination of Gallium

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Gallium with Pyridine 15

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of Polyphosphates 16

Pavlenko, V. M. A Problem of Compiling a Reference Guide on Rare

Earth Metals 17

AVAILABILITY: Library of Congress

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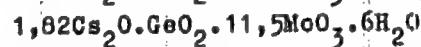
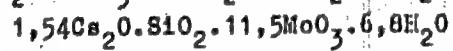
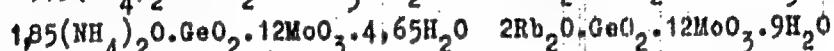
78-3-6-14/30

AUTHORS: Perel'man, F. M., Zvorykin, A. Ya., Yakubovskaya, T. N.

TITLE: Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon (Nekotoryye malorastvorimyye soli geteropolikislot germaniya i kremniya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr. 6,
pp. 1374 - 1380 (USSR)

ABSTRACT: In the present paper the difficultly soluble ammonia, rubidium and cesium salts of the germanium-and silicon-molybdenum-heteropolyacid were investigated. The synthesis of germanium-molybdenum and silicon-molybdenum-heteropolyacid as ammonia, rubidium and cesium salts was described. The following compounds were produced:



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78-3-6-14/30

Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon

The x-ray analyses show that all these salts are isomorphous. The solubility of the ammonia, rubidium and cesium salts of the silicon-molybdenum, and germanium-molybdenum-heteropolyacids at 25°C is investigated. The solubility of ammonia salt of Si-Mo-heteropolyacid is 7,55% of rubidium salt of Si-Mo-heteropolyacid is 0,475%, of cesium salt of Si-Mo-heteropolyacid 0,123%, of ammonia-Ge-Mo-acid 7,78%, of Rb-Ge-Mo-acid 0,90% and Cs-Ge-Mo-acid 0,075%. The solubility of all six salts was also determined in aqueous sulfuric acid solutions of ammonia and rubidium salts at a concentration of 1,5 - 40% sulfuric acid and of cesium salt at a concentration of 1,5-25% sulfuric acid. Also the solubility of cesium salts of the above mentioned heteropolyacids in nitric solutions at concentrations of 2% and 5,3% HNO_3 as well as the solubility of oxalic acid at concentrations of 2-9% HNO_3 was determined. Sulfuric acid considerably reduces the solubility of the ammonia, rubidium and cesium salts of the silicon-molybdenum-, and germanium-molybdenum-

Card 2/4

78-3-6-14/30

Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon

-heteropolyacids. On this occasion the solubility of the ammonia salts of the above mentioned heteropolyacids is ten times greater than the solubility of the corresponding rubidium salts. The cesium salt of the Ge-Mo-heteropolyacid has a solubility ten times smaller than that of the corresponding Rb-Ge-Mo-acid. Cesium salt of the Si-Mo-acid has a solubility hundred times smaller than the corresponding Rb-Mo-acid. It was found that the salts of the Gr-Mo-heteropolyacids are more easily soluble than the corresponding salts of the Si-Mo-acids almost in all cases especially in concentrated acids. Cesium salt of the Si-Mo-acid shows the smallest solubility. Its solubility in aqueous sulfuric solution is 0,004-0,005%. The solubility of cesium salt of the Ge-Mo-acid in the same sulfuric solution is 0,04%. There are 5 figures, 8 tables, and 19 references, 8 of which are Soviet.

Card 3/4

78-3-6-14/30

Some Difficultly Soluble Salts of the Heteropolyacid of Germanium and Silicon

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova,
AN SSSR (Institute of General and Inorganic Chemistry imeni
N. S. Kurnakov, AN USSR)

SUBMITTED: May 21, 1957

AVAILABLE: Library of Congress

1. Germanium compounds 2. Silicon compounds 3. Heteropolyacids
--Salts 4. Salts--Solubility 5. Chemical compounds--Production

Card 4/4

76-32-3-24/43

AUTHORS:

Zvorykin, A. Ya., Perel'man, F. M., Shakhova, S. K.

TITLE:

On the Catalytic Activity of Rare Elements in the Reaction
of the Decomposition of Hydrogen Peroxide (O kataliticheskoy
aktivnosti redkikh elementov v reaktsii razlozheniya perekisi
vodoroda. I.)

PERIODICAL:

Zhurnal Fizicheskoy Khimii, 1958, Vol 32, Nr 3,
pp 654 - 658 (USSR)

ABSTRACT:

Mixed catalysts of salts of rare elements are investigated in the present paper, the attention being focused on the influence of the ratio of catalyst components, as well as that of the temperature and the pH, upon the catalytic activity. In order to bring about a simultaneous mixture of both catalyst components with the hydrogen peroxide solution, a glass container was constructed in which two little dishes with the catalysts on a glass holder are located, from where they fall into the liquid upon mechanical agitation of the system. The velocity of decomposition of hydrogen peroxide was measured at 25°C and a pH of 8.0. The experiments performed with niobium oxalate

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76-32-3-24/43

On the Catalytic Activity of Rare Elements in the Reaction of the Decomposition of Hydrogen Peroxide

Showed a negative catalytic action of niobium upon other catalysts, especially cobalt chloride. Sodium molybdate in combination with copper chloride ($\text{Na}_2\text{MoO}_4 \cdot \text{CuCl}_2$) showed an increase of the catalytic action, which exceeded that of the individual components several times. Investigations with zirconium sulfate showed that in the system zirconium-sulfate/manganese-dioxide, the curve of the catalytic activity contains a maximum from which a complicated change of the catalytic activity may be deduced. A table of the changes of velocity and of the values of the reaction constant of the last-mentioned system is given from which it may be seen that the activity of zirconium sulfate at the beginning of the examination is higher, that it then drops to a lower value and remains constant. There are 4 figures, 1 table, and 9 references, 6 of which are Soviet.

Card 2/3

76-32-3-24/43

On the Catalytic Activity of Rare Elements in the Reaction of the Decomposition of Hydrogen Peroxide

ASSOCIATION: Akademiya nauk SSSR, Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova (AS USSR, Institute of General and Inorganic Chemistry imeni N. S. Kurnakov)

SUBMITTED: November 30, 1956

Card 3/3

5(4)

AUTHORS: Perel'man, F. M., Zvorykin, A. Ya, Shakhovn, S. K. SOV/76-33-2-34/45

TITLE: The Catalytic Activity of the Rare Elements in the Decomposition of Hydrogen Peroxide II (O kataliticheskoy aktivnosti redkikh elementov v reaktsii razlozheniya perekisi vodoroda II)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2,
pp 452 - 456 (USSR)

ABSTRACT:
The method of the work reported here was the same as was used in the previous paper, i.e., a simultaneous addition of both catalysts at the beginning of the reaction. Investigated were sodium gallate (I), thorium nitrate (II), titanium sulfate (III), and germanium chloride (IV), alone and together with the chlorides of cobalt, copper, and iron also of MnO₂ at 25°C and pH = 8.0. It was observed that a combination of (I) with CuCl₂ increased the catalytic activity and that this was greater than the additive values of the single components. All the catalysts of this system are unstable and lose their activity quickly (Fig 1). The system (II) - CuCl₂

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The Catalytic Activity of the Rare Elements in the
Decomposition of Hydrogen Peroxide II

SOV/76-33-2-34/45

and (II) - MnO_2 (Figs 2,3) show also an increased catalytic effect upon the decomposition of H_2O_2 . With the first system the activity is doubled and with the second system the activity is 4.6 times the additive value of the components using a content of 30% (II). The system (II) - MnO_2 is more stable in its catalytic activity than the above mentioned combinations of (I). An increase of 5 to 2.5 times in activity above the additive values of the components was observed for the (III)- $CuCl_2$ and (III) - $CoCl_2$ systems, and the maximum activity was found to occur with a content of 50% (III) (Figs 4,5). The (III)- $CoCl_2$ systems are high in activity but very unstable, while (III)- $CuCl_2$ are stabler combinations. In the (IV)- $CuCl_2$ system a smaller increase in activity was observed (Fig 6). The experimental results show that the maximum activity occurs with the compositions of a 1:1 molar ratio of the components. There are 6 figures and 3 references, 2 of which are Soviet.

Card 2/3

The Catalytic Activity of the Rare Elements in the
Decomposition of Hydrogen Peroxide II SOV/76-33-2-34/45

ASSOCIATION: Akademiya nauk SSSR, Institut obshchey i neorganicheskoy
khimii im. N. S. Kurnakova (Academy of Sciences, USSR,
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Kurnakov)

SUBMITTED: July 30, 1957

Card 3/3

5.2000

AUTHORS:

Perel'man, F. M., Zvorykin, A. Ya.,
Demina, G. A.

69030

S/078/60/005/04/034/040
B004/B016

TITLE:

Investigation of the Solubility in the System
 $\text{Y}(\text{NO}_3)_3 - \text{NH}_4\text{NO}_3 - \text{H}_2\text{O}$ at 25 and 50°

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 4, pp 960 - 963
(USSR)

ABSTRACT:

The authors refer to the method of the fractional separation of lanthanides used in practice and quote a paper by G. G. Urazov and Z. N. Shevtsova (Ref 4). The purpose of the present paper is to clarify the conditions for the occurrence of the yttrium-ammonium-nitrate double salt. The results obtained according to the solubility method are presented in tables 1, 2 and in Schreinemakers' diagrams in figures 1,2. At 50° the solubility curve shows three branches corresponding to the crystallization of the three salts $\text{Y}(\text{NO}_3)_3 \cdot 4\text{H}_2\text{O}$, $\text{Y}(\text{NO}_3)_3 \cdot 2\text{NH}_4\text{NO}_3$, and NH_4NO_3 . The double salt crystallizes at this temperature in the anhydrous state in the range of the concentrations of NH_4NO_3 from 16 to 44%, and of $\text{Y}(\text{NO}_3)_3$ from 66 - 48%. Its solubility in water amounts to 88% at 50°. At 25° the double salt could not be

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Investigation of the Solubility in the System
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obtained, although the diagram shows the corresponding branch. The authors assume that the crystallization of the double salt at this temperature is rendered difficult owing to the high viscosity of the solution. $\text{Y}(\text{NO}_3)_3$ crystallizes in the presence of NH_4NO_3 both at 25° and at 50° with four molecules of crystal water. There are 2 figures, 2 tables, and 6 references, 2 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: January 23, 1959

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86489

52610 1043, 1136, 1273

S/078/60/005/008/022/031/XX
B023/3066

AUTHORS: Zvorykin, A. Ya., Perel'man, F. M., Babiyevskaya, I. Z.,
Fedotova, T. N.

TITLE: Calcium and Iron Germanates

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 8,
pp. 1717-1724

TEXT: The authors investigated systems of sodium germanate and calcium nitrate or iron nitrate in aqueous solutions with different ratios of the components. The formation of calcium metagermanate, $\text{CaO} \cdot \text{GeO}_2 \cdot n\text{H}_2\text{O}$, and three iron germanates, $\text{Fe}_2\text{O}_3 \cdot \text{GeO}_2 \cdot n\text{H}_2\text{O}$, $\text{Fe}_2\text{O}_3 \cdot 2\text{GeO}_2 \cdot n\text{H}_2\text{O}$, and $\text{Fe}_2\text{O}_3 \cdot 3\text{GeO}_2 \cdot n\text{H}_2\text{O}$, was detected by Schreinemakers' method. Thermograms and X-ray diffraction patterns of the compounds mentioned above disclosed characteristic peculiarities and confirmed the chemical homogeneity of the resulting compounds. It was further found that the germanate $\text{Fe}_2\text{O}_3 \cdot \text{GeO}_2 \cdot n\text{H}_2\text{O}$ may be obtained with 15 and 2.5 molecules of hydration water, and that the Card 1/3

Calcium and Iron Germanates

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B023/B066

germanate $\text{Fe}_2\text{O}_3 \cdot 2\text{GeO}_2 \cdot n\text{H}_2\text{O}$ still contains two H_2O molecules after drying at 120°C . All iron germanates were subjected to X-ray phase analysis at the laboratory of V. G. Kuznetsov. Table 1 shows the composition of the liquid phases and of the "residues" in the system $\text{Na}_2\text{GeO}_3\text{-Ca}(\text{NO}_3)_2\text{-H}_2\text{O}$, and Table 2 dto. in the system $\text{Na}_2\text{GeO}_3\text{-Fe}(\text{NO}_3)_3\text{-H}_2\text{O}$. Fig. 1 illustrates the composition of the solid phases in the system $\text{Na}_2\text{GeO}_3\text{-Ca}(\text{NO}_3)_2\text{-H}_2\text{O}$, and Fig. 2 dto. in the system $\text{Na}_2\text{GeO}_3\text{-Fe}(\text{NO}_3)_3\text{-H}_2\text{O}$. V. F. Zhuravlev is mentioned. There are 7 figures, 2 tables, and 10 references: 4 Soviet, 4 German, and 2 US.

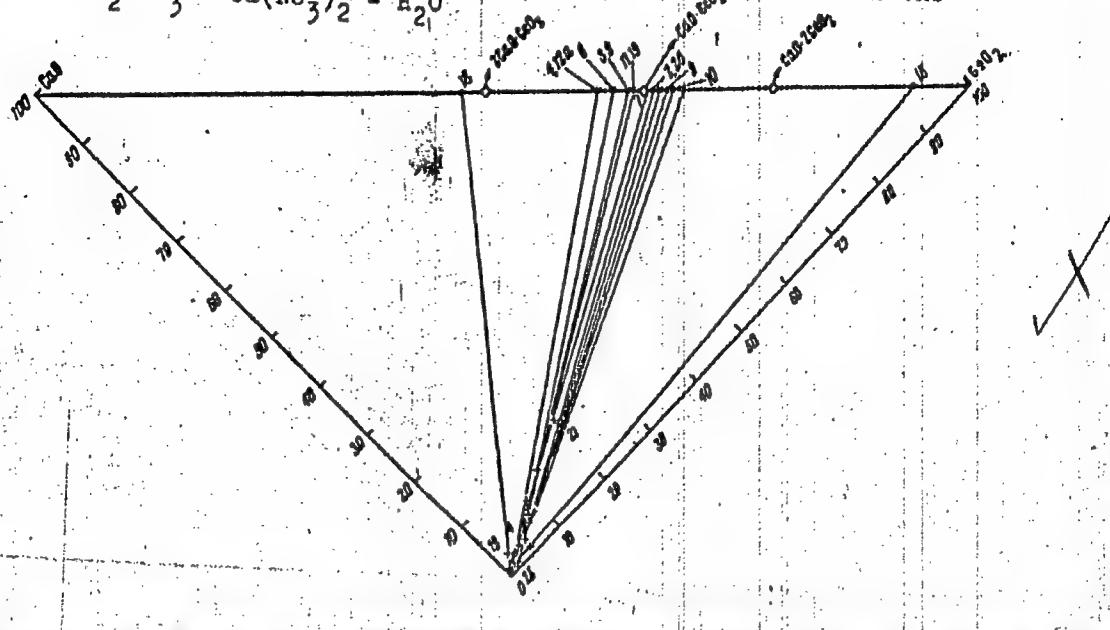
ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

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BC23/B066

Legend to Fig. 1: Fig. 1: Composition of the solid phases in the system $\text{Na}_2\text{GeO}_3 - \text{Ca}(\text{NO}_3)_2 - \text{H}_2\text{O}$



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CIA-RDP86-00513R002065720002-7
CIA-RDP86-00513R002065720002-7"

ZVORYKIN, A.Ya.; PEREL'MAN, F.M.

Oxidation of cobalt sulfide in the presence of sodium chloride.
Zhur.prikl.khim. 33 no.4:765-768 Ap '60. (MIRA 13:9)
(Cobalt sulfide) (Oxidation)

ZVORYKIN, A. Ya.

Sintering of some sulfates. Zhur.prikl.khim. 33 no.5:1019-1024
My '60. (MIRAI3:7)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova
AN SSSR.

(Sulfates)

31866

S/078/62/007/003/012/019
B110/B138

5.2600

AUTHORS: Perel'man, F. M., Zvorykin, A. Ya., Demina, G. A.

TITLE: The solubility isotherm (25°C) of the system
 $\text{Pr}(\text{NO}_3)_3\text{-RbNO}_3\text{-HNO}_3\text{-H}_2\text{O}$

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 3, 1962, 641 - 644

TEXT: The formation of double nitrates of praseodymium and rubidium in the presence of HNO_3 was examined in a thermostat ($25 \pm 0.1^\circ\text{C}$). Liquid phase samples and residues were taken after the establishment of equilibrium (after 2 - 3 days). Chemically pure $\text{Pr}_{6\text{O}}_{11}$ and Rb_2CO_3 were converted into $\text{Pr}(\text{NO}_3)_3\cdot 6\text{H}_2\text{O}$ ($\text{Pr}_{6\text{O}}_{11}$, 40.96%) and into rubidium nitrate (Rb_2O , 62.66%) by means of HNO_3 . Pr was precipitated by means of NH_4OH , annealed, and weighed as $\text{Pr}_{6\text{O}}_{11}$. Rb was weighed as perchlorate. Five solid phases were formed: (1) $\text{Pr}(\text{NO}_3)_3$; (2) $5\text{RbNO}_3\cdot 4\text{Pr}(\text{NO}_3)_3$; (3) $7\text{RbNO}_3\cdot 5\text{Pr}(\text{NO}_3)_3$; (4) $5\text{RbNO}_3\cdot 2\text{Pr}(\text{NO}_3)_3$; (5) RbNO_3 . The compositions next

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The solubility isotherm...

to RbNO_3 were examined at 30 - 36%, and those adjoining $\text{Pr}(\text{NO}_3)_3$ at 26 - 30% of HNO_3 . The incongruent double salt $2\text{Pr}(\text{NO}_3)_3 \cdot 5\text{RbNO}_3$ only exists with $\text{Pr}(\text{NO}_3)_3$ concentration less than 10.09%. If the $\text{Pr}(\text{NO}_3)_3$ concentration is increased, $5\text{Pr}(\text{NO}_3)_3 \cdot 7\text{RbNO}_3$ crystallizes. Anhydrous $\text{Pr}(\text{NO}_3)_3$ crystallizes first and next, in the presence of not more than 3 - 4% of RbNO_3 , the double salt $5\text{RbNO}_3 \cdot 4\text{Pr}(\text{NO}_3)_3$. However, only three salts could be synthesized: (1) anhydrous $\text{Pr}(\text{NO}_3)_3$ under the conditions of point 2 (Fig. 1); (2) the anhydrous, bright green, coarse-crystalline double salt $4\text{Pr}(\text{NO}_3)_3 \cdot 5\text{Rb}(\text{NO}_3)_3$ under the conditions of point 6; (3) the anhydrous, light green, fine crystalline double salt $2\text{Pr}(\text{NO}_3)_3 \cdot 5\text{RbNO}_3$ under the conditions of point 18. All three salts decompose at 85 - 90°C with the liberation of dark-brown vapors of oxides of nitrogen. D. I. Mendeleev and N. S. Kurnakov are mentioned. There are 2 figures, 1 table, and 4 references: 3 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: R. C. Vickery,

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PEREL'MAN, F.M.; ZVORYKIN, A.Ya.; GAMZA, L.B.

Degree of polymerization of potassium metaphosphates at various
temperatures. Izv. AN SSSR. Neorg. mat. 1 no.6:900-902 Je '65.
(MIRA 18:8)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7"
PEREL'MAN, F.M.; ZVORYKIN, A.Ya.; GAMZA, L.B.

Degree of polymerization of sodium metaphosphate at various temperatures. Izv. AN SSSR. Neorg. mat. 1 no.5:725-729 My '65. (MIRA 1B:10)

1. Institut obshchay i neorganicheskoy khimii imeni Kurnakova AN
SSSR.

Solubility isotherm (25°) in the system $\text{Nd}(\text{NO}_3)_3$ - RbNO_3 - H_2O .
Zhur. neorg. khim. 8 no.7:1753-1755 Jl 63.

(MIRA 16:7)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.

(Neodymium nitrate) (Rubidium nitrate)
(Solubility)

ZVORYKIN, A.Ya.

Some inorganic polymers based on rubidium phosphates. Zhur.neorg.-
khim. 8 no.2:274-277 F '63. (MIRA 16:5)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Rubidium phosphates) (Polymerization)

ZVORYKIN, A.Ya.; RATNIKOVA, V.D.

Solubility isotherm (25°) in the system CsH_2PO_4 — $\text{NH}_4\text{H}_2\text{PO}_4$ — H_2O .
Zhur. neorg. khim. 8 no.4:1018-1019 Ap '63. (MIRA 16:3)

I. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Alkali metal phosphates) (Solubility)

ACCESSION NR: AP3003485

8/0070/63/009/007/1753/1755

AUT: ...; Mel'nikov, I. M.; Evorykin, A. Ya.; Demina, G. A.

TOPIC: Solubility isotherm - 25° in the system Nd₃(NO₃)₆ - RbNO₃ - H₂O

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 7, 1963, 1753-1755

TOPIC TAGS: solubility, isotherms, RbNO₃, rubidium nitrate, neodymium nitrate, praseodymium nitrate

ABSTRACT: The authors studied the quaternary system Nd(NO₃)₆ sub 3 - RbNO₃ sub 1 - H₂O sub 1 - H₂O at 25° in an interval of 2E - 30% H₂O sub 1 by the method of titration. It was found that two double salts of the composition Nd₃(NO₃)₆ · RbNO₃ · H₂O and Nd₃(NO₃)₆ · 2RbNO₃ · H₂O were formed. The properties of these solid solutions

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YEREL'MAN, F.M.; ZVORYKIN, A.Ya.; DEMINA, G.A.

Solubility isotherm of the system $\text{Pr}(\text{NO}_3)_3 - \text{RbNO}_3 - \text{H}_2\text{O}$. Zhur.
neorg.khim. 7 no.3:641-644 Mr. 162. (MIRA 15:3)
(Praseodymium nitrate) (Rubidium nitrate)
(Systems (Chemistry))

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720002-7
PEREL'MAN, F.M., ZVORIKIN, A.Ya., TARASOV, V.N., DANILOVA, O.A.

Thio salts of molybdenum and tungsten. Zhur.neorg.khim. 6 no.9:
1999-2002 S '61. (MIRA 14:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
AN SSSR.
(Molybdates) (Tungstates) (Systems (Chemistry))

Solubility isotherm of the system $\text{RbH}_2\text{PO}_4 - \text{H}_2\text{O}$ at 25 . Zhur.neorg.
khim. 6 no.11:2572-2575 '61. (MIRA 14:10)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Rubidium phosphate) (Ammonium phosphate) (Solubility)

ZVORYKIN, A.YA.; PEREL'MAN, T.M.; TARASOV, V.V.

Molybdenum and tungsten sulfides and oxysulfides. Zhur.neorg.khim.
6, no.9:1994-1998 S '61. (MIRA 14:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
Akademii nauk SSSR.
(Molybdenum sulfide) (Oxysulfides)